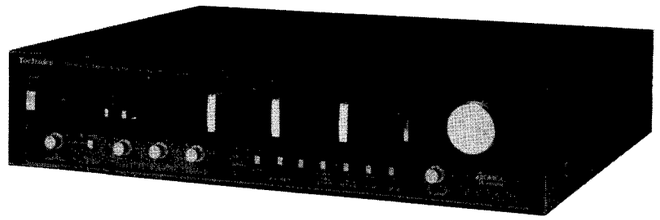
ORDER NO. SD83062524C8

Service Manual

Stereo DC Control Amplifier

SU-A4MK2

[E],[EH],[EB],[EF],
[EK],[Ei],[XA]



Areas

*[E] is available in Scandinavia and Switzerland.
*[EH] is available in Holland.
*[EB] is available in Belgium.
*[EF] is available in France.
*[EK] is available in United Kingdom.
*[Ei] is available in Italy.
*[XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

Specifications (Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

Total harmonic distortion (20 Hz~20 kHz)
- **PHONO MM 2.5 mV** 0.006% (0.001%, 2V output at vol. max.)
- **PHONO MC 250 μF** 0.01% (0.001%, 2V output at vol. max.)
- **TUNER, AUX, CD, VIDEO, TAPE 1, TAPE 2** 0.006% (0.001%, 2V output at vol. max.)

Input sensitivity and impedance
- **PHONO 1 MM** 1 mV/47kΩ, 2.5 mV/47kΩ
- **PHONO 1 MC** 70 μV/30Ω, 250 μV/470Ω
- **PHONO 2 MM** 2.5 mV/47kΩ
- **TUNER** 150 mV/47kΩ
- **AUX/CD/VIDEO** 150 mV/47kΩ
- **TAPE 1, 2** 150 mV/47kΩ

PHONO maximum input voltage
- **MM** 160 mV
- **MC** 16 mV

S/N
- **PHONO MM** 79 dB (92 dB, IHF, A)
- **MC** 74 dB (82 dB, IHF, A)
- **TUNER, AUX/CD/VIDEO, TAPE 1, TAPE 2** 100 dB (IHF, A: 106 dB)

Frequency response
- **PHONO MM** RIAA standard curve ±0.15 dB (20 Hz~20 kHz)
- **PHONO MC** RIAA standard curve ±0.2 dB (20 Hz~100 kHz)
- **TUNER, AUX/CD/VIDEO, TAPE 1, TAPE 2** DC~20 kHz (+0 dB, −0.1 dB) DC~200 kHz (+0 dB, −3 dB)

Shelving tone
- **SUPER TREBLE (50 kHz)** −10 dB~+10 dB
- **TREBLE (20 kHz)** −5 dB~+5 dB
- **BASS (50 Hz)** −5 dB~+5 dB
- **SUPER BASS (20 Hz)** 0 dB~+10 dB

Turnover frequency
- **SUPER TREBLE** 8 kHz
- **TREBLE** 2 kHz
- **SUPER BASS (12 dB/oct)** 75 Hz, 150 Hz
- **BASS** 500 Hz

Subsonic filter 20 Hz, −12 dB/oct.
High-cut filter 7 kHz, −6 dB/oct.
Loudness control (volume at −30 dB) 50 Hz, +7 dB
Muting −20 dB
Output voltage and impedance
- **PRE OUT** rated 2V/2Ω, max. 8V/2Ω
- **TAPE, 1, 2 REC OUT** 150 mV/600Ω

■ GENERAL

Power consumption 15W
Power supply AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D) 430 × 97 × 330 mm (16-15/16" × 3-13/16" × 13")
Weight 8 kg (17.6 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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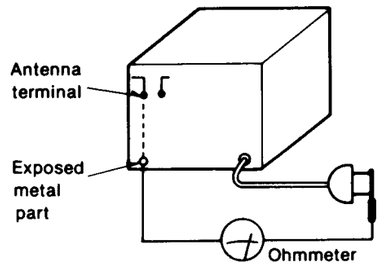
■ SAFETY PRECAUTIONS

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from electric shock hazard.

• INSULATION RESISTANCE TEST

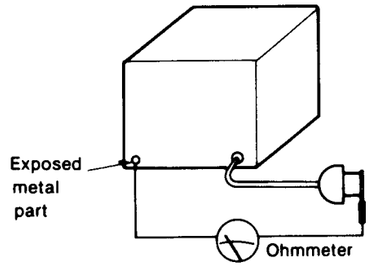
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



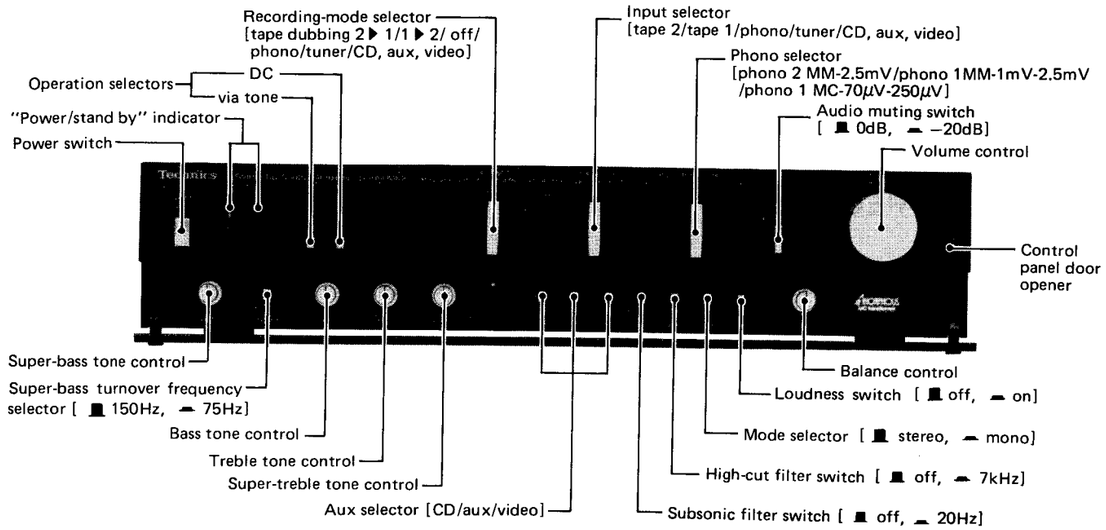
(Fig. B)

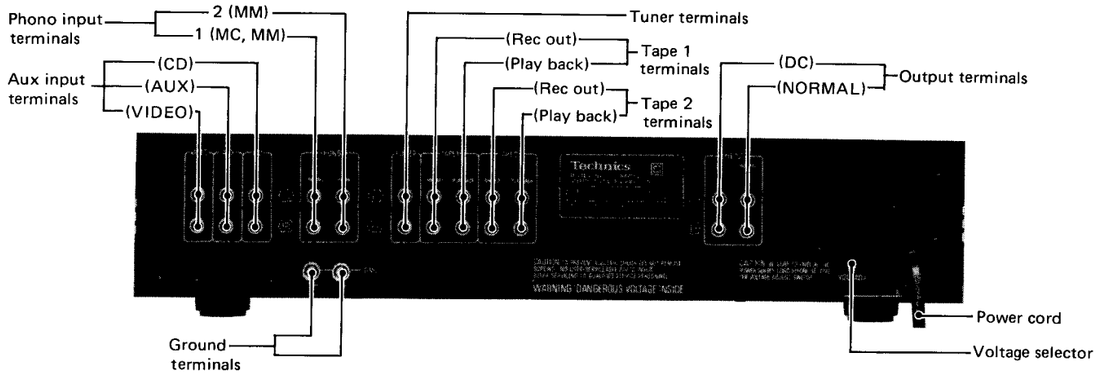
Resistance = Approx ∞

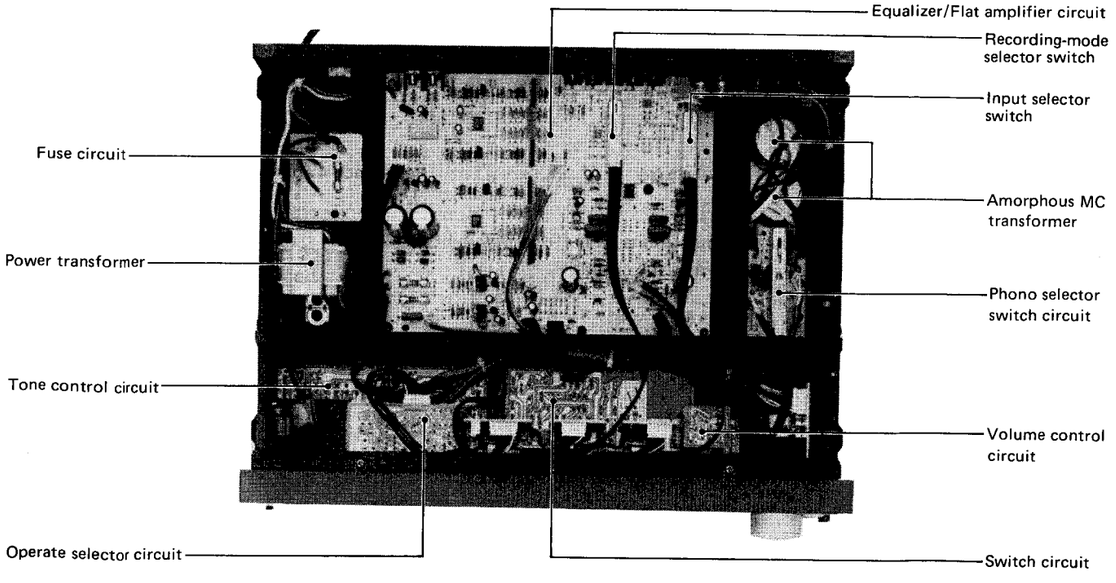
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

SU-A4MK2

■ LOCATION OF CONTROLS


Recording-mode selector [tape dubbing 2▶ 1/1 ▶2/ off/ phono/tuner/CD, aux, video]
Input selector [tape 2/tape 1/phono/tuner/CD, aux, video]
Operation selectors
DC
via tone
Phono selector [phono 2 MM-2.5mV/phono 1MM-1mV-2.5mV /phono 1 MC-70μV-250μV]
"Power/stand by" indicator
Power switch
Audio muting switch [▂ 0dB, ▃ −20dB]
Volume control
Control panel door opener
Super-bass tone control
Super-bass turnover frequency selector [▂ 150Hz, ▃ 75Hz]
Balance control
Loudness switch [▂ off, ▃ on]
Bass tone control
Mode selector [▂ stereo, ▃ mono]
Treble tone control
Super-treble tone control
High-cut filter switch [▂ off, ▃ 7kHz]
Aux selector [CD/aux/video]
Subsonic filter switch [▂ off, ▃ 20Hz]





■ DISASSEMBLY INSTRUCTIONS

- **How to remove the side, top and bottom board.**
  1. Remove the 8 setscrews [Fig. 1: ❶ ~ ❽] of side board and 10 setscrews [Fig. 1: ❾ ~ ⓲] of top board.
  2. Remove the 11 setscrews [Fig. 2: ⓳ ~ ㉙] of bottom board.

Note
Remove the screws by using the hexagonal rod wrench. when the knob in the front panel has to removed.

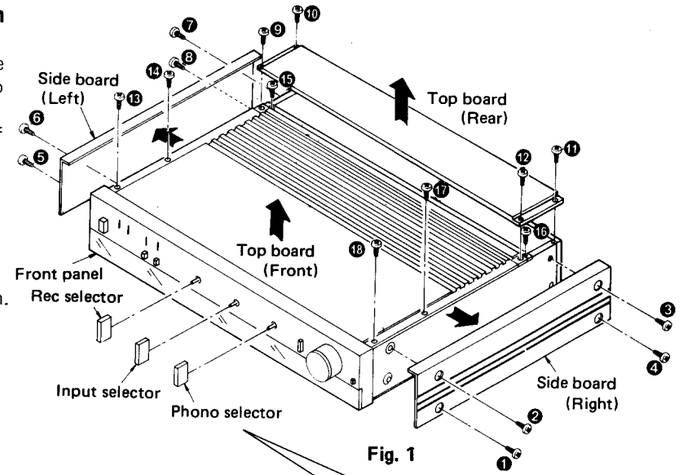


Fig. 1

- **How to remove the front panel**
  1. Remove the side and top boards.
  2. Remove the 4 (red) setscrews [Fig. 2: ㉚ ~ ㉛ , Fig. 3: ㉜ ~ ㉝] of front panel, and carefully pull out the volume knob toward you.

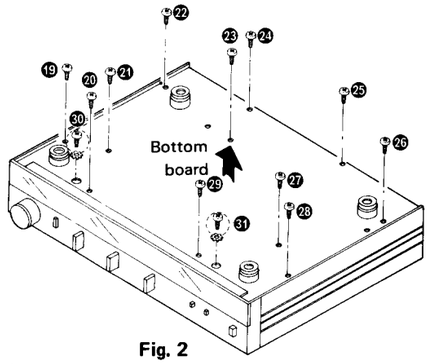
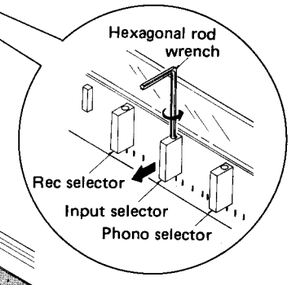


Fig. 2



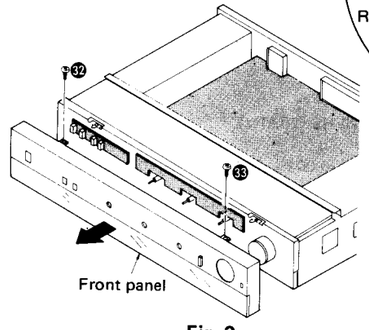


Fig. 3

Note) Remove the screw in the circle (broken line) when the front panel has to be removed.

- **How to remove the lamp holder [Fig. 4]**
  1. Remove the bottom board and front panel.
  2. Remove the lamp board and holder.

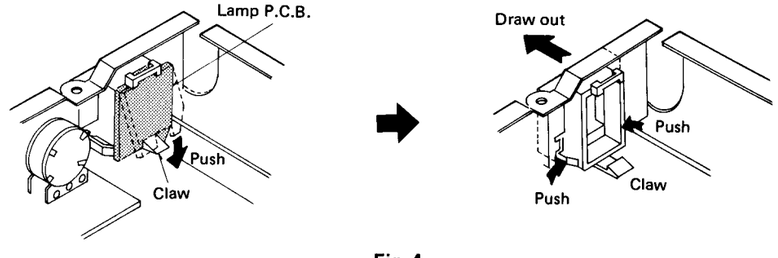


Fig. 4

ORDER NO. SD83062524C8–A

Stereo DC Control Amplifier

SU-A4MK2

- This booklet contains the specifications and adjusting procedures for SU-A4MK2, written Germany, French and Spanish.
- File this manual together with the SU-A4MK2 service manual (Order No. SD83062524C8).

- Diese Broschüre enthält die technischen Daten und die Beschreibungen der Justiermethoden für SU-A4MK2 in deutscher, französischer und spanisher Sprache.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für SU-A4MK2 (Bestell-Nr. SD83062524C8) auf.

- Cette brochure contient les spécifications et les procédures de réglage pour le SU-A4MK2, écrites en allemand, en français et en espagnol.
- Classer ce manuel en même temps qu'avec le manuel de service du SU-A4MK2 (N° d'order : SD83062524C8).

- Este librito contiene las especificaciones y procedimientos de ajuste para SU-A4MK2, escritas en alemán, francés y español.
- Guardar este manual juntamente con el manual de servicio de SU-A4MK2 (Pedido N°. SD83062524C8).

DEUTSCH

■ TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Gesamtklirrfaktor (20 Hz~20 kHz)
- **Phono - magnetisch (PHONO MM) 2,5 mV** 0,006%
  (0,001%, 2 V Ausgangsspannung bei Höchstleistung)
- **Phono - dynamisch (PHONO MC) 250 μF** 0,01%
  (0,001%, 2 V Ausgangsspannung bei Höchstleistung)
- **Tuner, Aux, CD, VIDEO, Tape 1, Tape 2** 0,006%
  (0,001%, 2 V Ausgangsspannung bei Höchstleistung)

Eingangsempfindlichkeit und -impedanz

Phono 1 magnetisch (PHONO 1 MM)	1 mV/47 kΩ
	2,5 mV/47 kΩ
Phono 1 - dynamisch (PHONO 1 MC)	70 μV/30 Ω
	250 μV/470 Ω
Phono 2 magnetisch (PHONO 2 MM)	2,5 mV/47 kΩ
Tuner	150 mV/47 kΩ
AUX/CD/VIDEO	150 mV/47 kΩ
Tape 1/2	150 mV/47 kΩ

Maximale TA-Eingangsspannung

magnetisch (MM)	160 mV
dynamisch (MC)	16 mV

Geräuschabstand
- **Phono - magnetisch (PHONO MM)**
  79 dB (92 dB nach IHF, A)
- **Phono - dynamisch (PHONO MC)**
  74 dB (82 dB nach IHF, A)
- **Tuner, Aux/CD/Video, Tape 1, Tape 2**
  100 dB (nach IHF, A: 106 dB)

Frequenzgang

Phono magnetisch	RIAA-Standardkurve
	±0,15 dB (20 Hz ~ 20 kHz)
Phono dynamisch	RIAA-Standardkurve
	±0,2 dB (20 Hz ~ 100 kHz)
Tuner, Aux/CD/Video, Tape 1, Tape 2	
	DC ~ 20 kHz (+0 dB, −0,1 dB)
	DC ~ 200 kHz (+0 dB, −3 dB)

Shelving-Tonregler	
Überhöhenregler (50 kHz)	−10 dB~+10 dB
Höhenregler (20 kHz)	−5 dB~+5 dB
Baßregler (50 Hz)	−5 dB~+5 dB
Tiefbaßreglers (20 Hz)	0 dB~+10 dB
Übergangsfrequenz	
Überhöhenregler	8 kHz
Höhenregler	2 kHz
Tiefbaßreglers (12 dB/okt.)	75 Hz, 150 Hz
Baßregler	500 Hz
Tiefenfilter	20 Hz, −12 dB/Okt.
Rauschfilter	7 kHz, −6 dB/Okt.
Gehörrichtige Lautstärkekorrektur (Loudness)	
(bei −30 dB Ausgangsleistung)	50 Hz, +7 dB
Tondämpfung	−20 dB
Ausgangsspannung und -impedanz	
Vorverstärker (PRE OUT)	Nennspg. 2 V/2 Ω
	max. 8 V/2 Ω
Tape 1/2 Aufnahme (TAPE 1, 2 REC OUT)	150 mV/600Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	15 W
Netzspannung	
Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V	
Abmessungen (B×H×T)	430 × 97 × 330 mm
Gewicht	8 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

■ ABGLEICH-METHODE

○ Einstellungen am Gerät und zu verwendende Instrumente

1. Eingangs-Wahlschalter . . . . . tuner
2. Betriebsart-Schalter . . . . . DC
3. Gleichstrom-Voltmeter (Hochpräzisions-Typ)

Justierung	Gleichstrom-Voltmeter-Anschlüsse	Zu justierender Drehwiderstand	Vorgehen
Konstant-spannungs-Stromver-sorgung	Zwischen TP701 und Masse (+B Spannung)	VR701	○ So abgleichen, daß Voltmeter 17V anzeigt.
	Zwischen TP702 und Masse (−B Spannung)	—	○ Überprüfen, daß Voltmeter-Anzeige −17 bis −18V beträgt.
Gleichstrom-Balance (Puffer-Verst.)	Zwischen Gleichstrom-Ausgangsanschluß (L.K.) und Masse	VR601	(1) Lautstärke auf Minimum einstellen (∞). (2) Auf Minimum (0 mV) am Voltmeter im 3 mV-Bereich abgleichen.
	Zwischen Gleichstrom-Ausgangsanschluß (R.K.) und Masse	VR602	
Gleichstrom-Balance (Flacher Verst.)	Zwischen Gleichstrom-Ausgangsanschluß (L.K.) und Masse	VR501	(1) Lautstärke auf Maximum (0) einstellen. (2) Auf Minimum (0 mV) am Voltmeter im 10 mV-Bereich abgleichen.
	Zwischen Gleichstrom-Ausgangsanschluß (R.K.) und Masse	VR502	

FRANÇAIS

■ CARACTERISTIQUES (Sujet à changement sans prearis.)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Distorsion harmonique totale (20 Hz~20 kHz)
PHONO, AIMANT MOBILE (PHONO MM) 2,5 mV 0,006%
(sortie de 0,001%, 2V à vol. max.)
PHONO, BOBINE MOBILE (PHONO MC) 250 μF 0,01%
(sortie de 0,001%, 2V à vol. max.)
SYNTONISATEUR, AUX, CD, VIDEO, BANDE 1, BANDE 2 (TUNER, AUX, CD, VIDEO, TAPE 1, TAPE 2) 0,006%
(sortie de 0,001%, 2V à vol. max.)

Sensibilité et impédance d'entrée
PHONO 1 AIMANT MOBILE (PHONO 1 MM) 1 mV/47kΩ
2,5 mV/47kΩ
PHONO 1 BOBINE MOBILE (PHONO 1 MC) 70 μV/30Ω
250 μV/470Ω
PHONO 2 AIMANT MOBILE 2,5 mV/47kΩ
SYNTONISATEUR (TUNER) 150 mV/47kΩ
AUX/CD/VIDEO 150 mV/47kΩ
BANDE 1, 2 (TAPE 1, 2) 150 mV/47kΩ

PHONO (tension d'entrée maximum)
AIMANT MOBILE (MM) 160 mV
BOBINE MOBILE (MC) 16 mV

Signal/Bruit
PHONO, AIMANT MOBILE (PHONO MM) 79 dB (92 dB, IHF, A)
PHONO, BOBINE MOBILE (PHONO MC) 74 dB (82 dB, IHF, A)
SYNTONISATEUR, AUX/CD/VIDEO, BANDE 1, BANDE 2 (TUNER, AUX/CD/VIDEO, TAPE 1, TAPE 2) 100 dB (IHF, A: 106 dB)

Réponse de fréquence
PHONO AIMANT MOBILE Courbe nominale RIAA ±0,15 dB (20 Hz~20 kHz)
PHONO BOBINE MOBILE Courbe nominale RIAA ±0,2 dB (20 Hz~100 kHz)
SYNTONISATEUR, AUX/CD/VIDEO, BANDE 1, BANDE 2 (TUNER, AUX/CD/VIDEO, TAPE 1, TAPE 2) DC~20 kHz (+0 dB, −0,1 dB)
DC~200 kHz (+0 dB, −3 dB)

Tonalité shelving	
ULTRA-AIGUËS (50 kHz)	−10 dB~+10 dB
AIGUËS (20 kHz)	−5 dB~+5 dB
BASSES (50 Hz)	−5 dB~+5 dB
ULTRA-BASSES (20 Hz)	0 dB~+10 dB
Fréquence charnière	
ULTRA-AIGUËS	8 kHz
AIGUËS	2 kHz
ULTRA-BASSEA (12 dB/oct)	75 Hz, 150 Hz
BASSES	500 Hz
Filtre subsonique	20 Hz, −12 dB/oct.
Filtre coupe-hauts	7 kHz, −6 dB/oct.
Compensateur physiologique (volume à −30 dB)	50 Hz, +7 dB
Réglage silencieux	−20 dB
Tension de sortie et impédance	
PREAMPLI (PRE OUT)	nominale 2V/2Ω maxi. 8V/2Ω
SORTIE ENREGISTREMENT/BANDE 1, 2 (TAPE 1, 2 REC OUT)	150 mV/600Ω

■ DIVERS

Consommation	15W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 97 × 330 mm
Poids	8 kg

Nota:
La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. (arrêté 14 Janvier 1980).

Remarque:
On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

■ PROCEDURE DE MISE AU POINT

○ Conditions de l'appareil et appareil utilisè.

1. Commutateur sèlecteur d'entrèe . . . . . .tuner (synthonisateur)
2. Commutateur de commande . . . . . .DC (C.C.)
3. Voltmètre à C.C. (modèle de prècision)

Points de réglage	Raccordements du voltmètre à C.C.	VR à régler	Procédure
Alimentation à tension constante	Entre TP701 et la terre (tension +B)	VR701	○ Ajuster de telle sorte que la lecture du voltmètre soit de 17V.
	Entre TP702 et la terre (tension −B)	—	○ Vérifier que la lecture du voltmètre soit de −17 à −18V.
Compensation du C.C. (Ampli. séparateur)	Entre la borne de sortie C.C. (canal de gauche) et la terre	VR601	(1) Régler le volume sonore au minimum (∞). (2) L'ajuster au minimum (0 mV) sur le voltmètre à C.C. dans une plage de 3 mV.
	Entre la borne de sortie C.C. (canal de droite) et la terre	VR602	
Compensation du C.C. (Ampli. plat)	Entre la borne de sortie C.C. (canal de gauche) et la terre	VR501	(1) Régler le volume sonore au maximum (0). (2) L'ajuster au minimum (0 mV) sur le voltmètre à C.C. dans une plage de 10 mV.
	Entre la borne de sortie C.C. (canal de droite) et la terre	VR502	

ESPAÑOL

■ ESPECIFICACIONES (Estas especificaciones están sujetas a cualquier cambio sin previo eviso.)

(DIN 45 500)

■ SECCION AMPLIFICADOR

Distorsión armónica total (20 Hz~20 kHz)
- **TOCADISC. I.M. (PHONO MM) 2,5 mV** 0,006% (0,001%, 2V de salida a vol. máx.)
- **TOCADISC. B.M. (PHONO MC) 250 μF** 0,01% (0,001%, 2V de salida a vol. máx.)
- **SINTON., AUX., CD, VIDEO, GRAB. 1, GRAB. 2 (TUNER, AUX, CD, VIDEO, TAPE 1, TAPE 2)** 0,006% (0,001%, 2V de salida a vol. máx.)

Sensibilidad e impedancia de entrada
- **TOCADISC. 1 I. M. (PHONO 1 MM)** 1 mV/47kΩ, 2,5 mV/47kΩ
- **TOCADISC. 1 B. M. (PHONO 1 MC)** 70 μV/30Ω, 250 μV/470Ω
- **TOCADISC. 2 I. M. (PHONO 2 MM)** 2,5 mV/47kΩ
- **SINTON. (TUNER)** 150 mV/47kΩ
- **AUX./CD/VIDEO (AUX/CD/VIDEO)** 150 mV/47kΩ
- **GRAB. 1, 2 (TAPE 1, 2)** 150 mV/47kΩ

Voltaje máximo de entrada de PHONO
- **I. M. (MM)** 160 mV
- **B. M. (MC)** 16 mV

Relación de señal a ruido
- **TOCADISC. I. M. (PHONO MM)** 79 dB (92 dB, IHF, A)
- **TOCADISC. B. M. (PHONO MC)** 74 dB (82 dB, IHF, A)
- **SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE)** 100 dB (IHF, A: 106 dB)

Respuesta de frecuencia
- **TOCADISC. I. M. (PHONO MM)** curva RIAA estándar ±0,15 dB (20 Hz~20 kHz)
- **TOCADISC. B. M. (PHONO MC)** curva RIAA estándar ±0,2 dB (20 Hz~100 kHz)
- **SINTON., AUX./CD/VIDEO, GRAB. 1, GRAB. 2 (TUNER, AUX/CD/VIDEO, TAPE 1, TAPE 2)** DC~20 kHz (+0 dB, −0,1 dB), DC~200 kHz (+0 dB, −3 dB)

Tono de múltiples segmentos
- **SUPERAGUDOS (50 kHz)** −10 dB~+10 dB
- **AGUDOS (20 kHz)** −5 dB~+5 dB
- **BAJOS (50 Hz)** −5 dB~+5 dB
- **SUPERBAJOS (20 Hz)** 0 dB~+10 dB

Frecuencia de tránsito
- **SUPERAGUDOS** 8 kHz
- **AGUDOS** 2 kHz
- **SUPERBAJOS (12 dB/oct)** 75 Hz, 150 Hz
- **BAJOS** 500 Hz

Filtro subsónico 20 Hz, −12 dB/oct.
Filtro de corte de altos 7 kHz, −6 dB/oct.
Control de sonoridad (volumen a −30 dB) 50 Hz, +7 dB
Silenciamiento −20 dB

Voltaje e impedancia de salida
- **SAL. PREAMPLIF. (PRE OUT)** de régimen 2V/2Ω, máx. 8V/2Ω
- **GRAB. 1, 2 SAL. GRAB.(TAPE 1, 2 REC OUT)** 150 mV/600Ω

■ GENERAL

Consumo de energía 15W
Alimentación de energía CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensiones (An.×Al.×Prof.) 430 × 97 × 330 mm
Peso 8 kg

Nota:
La distorsión armónica total se mide con el analizador de espectró digital (sistema H.P. 3045).

■ PROCEDIMIENTO DE AJUSTE

○ Condiciones del aparato e instrucciones usadas

1. Interruptor selector de entrada ..... tuner (sintonizador)
2. Interruptor de operación ..... DC(CC)
3. Voltímetro de CC (tipo de precisión)

Items de ajuste	Conexiones de voltímeter de CC	VR ajustado	Procedimiento
Fuente de alimentación de voltaje constante	Entre TP701 y tierra (voltaje +B)	VR701	○ Ajustar de manera que la lectura de voltímetro sea 17V.
	Entre TP702 y tierra (voltaje −B)	—	○ Comprobar que la lectura de voltímetro sea −17 a −18V.
Equilibrio de CC (Amp. separador)	Entre terminal de salida de CC (canal I) y tierra	VR601	(1) Ajustar volumen de sonido a mínimo (∞). (2) Ajustarlo a mínimo (0 mV) en voltímetro de CC en la gama de 3 mV.
	Entre terminal de salida de CC (canal D) y tierra	VR602	
Equilibrio de CC (Amp. de respuesta plana)	Entre terminal de salida de CC (canal I) y tierra	VR501	(1) Ajustar volumen de sonido a máximo (0). (2) Ajustarlo a mínimo (0 mV) en voltímetro de CC en la gama de 10 mV.
	Entre salida de CC (canal D) y tierra	VR502	

Printed in Japan
830601300 ⓀTN

• How to remove the booster transformer (Amorphous MC transformer)

1. Remove the top board.
2. Remove the 8 setscrews [Fig. 5: ㉞ ~ ㊶] of shield cover.
3. Remove the remote cable of S1. [Fig. 6]
4. Remove the 2 connectors and the 2 setscrews [Fig. 6: ㊷ ~ ㊸] of phono select switch (4) P.C.B.
5. Unsolder the booster transformer leads and 4 setscrews [Fig. 6: ㊹ ~ ㊼]
6. For the wiring of booster transformer, refer to Fig. 7.

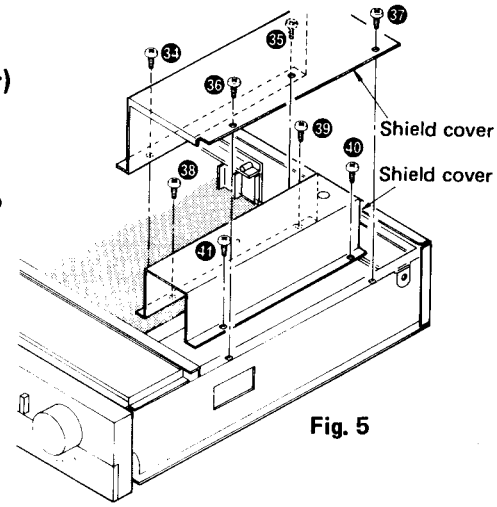


Fig. 5

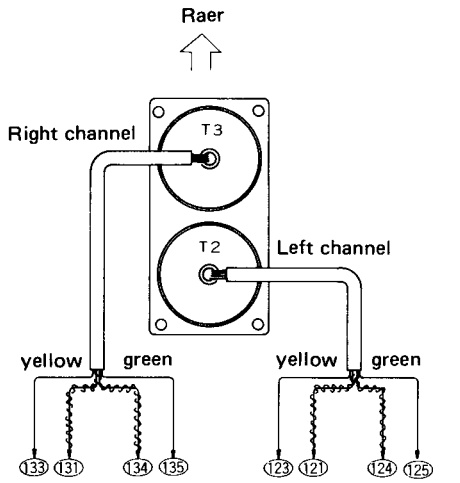


Fig. 7

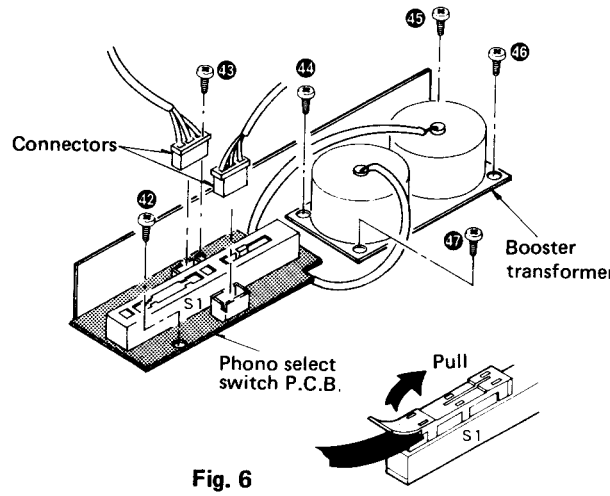


Fig. 6

• How to remove the tone control P.C.B. and switch P.C.B.

1. Remove the bottom board and front panel, and turn over the set.
2. Remove each tone control knob and 4 units of the volume knobs, and raise the switch P.C.B. in the direction of the arrow. [Fig. 8]
3. Remove the balance knob of switch P.C.B. as well as 1 nut and 2 switch setscrews [Fig. 8: ㊽ , ㊾] and draw out the tone control P.C.B. in the direction of the arrow.

• How to remove the fuse

1. Remove the top board.
2. Remove the 4 setscrews [Fig. 9: ㊿ ~ ㊸] of shield case, and remove the Fuse.

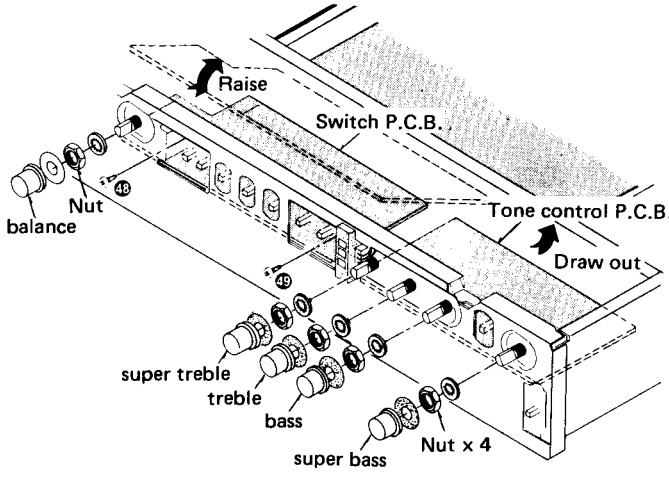


Fig. 8

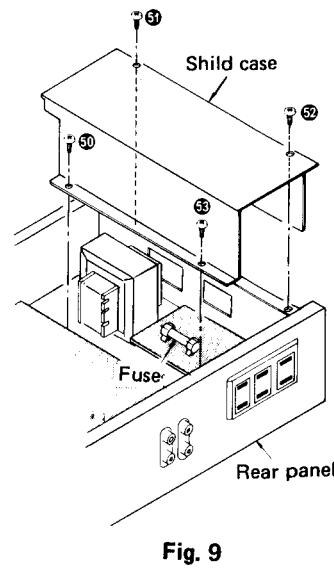


Fig. 9

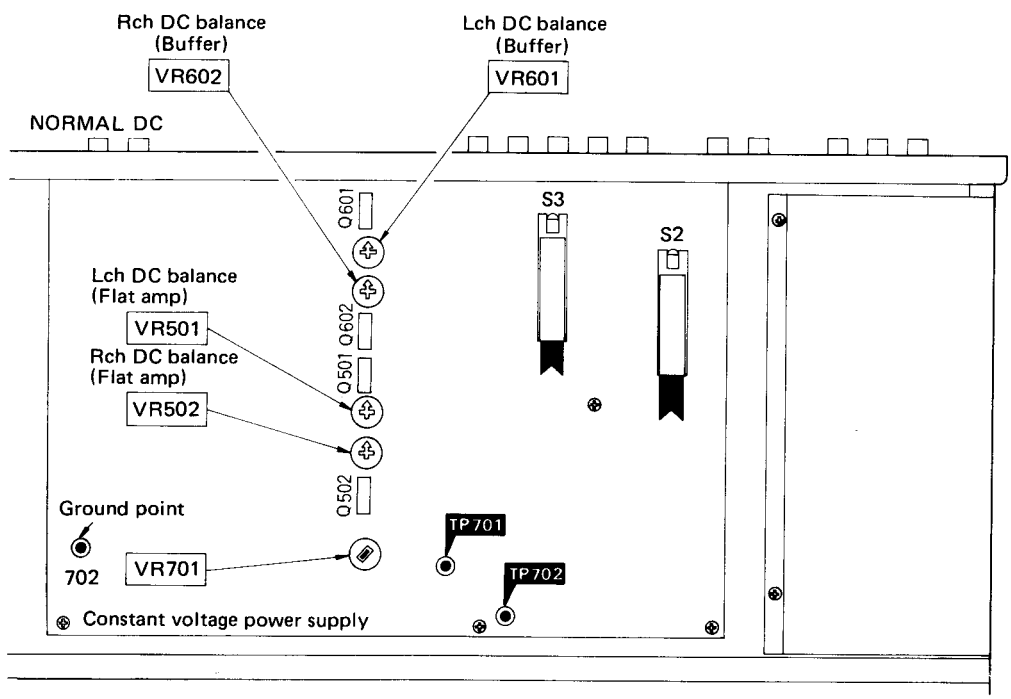
■ ADJUSTMENT PROCEDURE

○ Conditions of the set, and instruments used

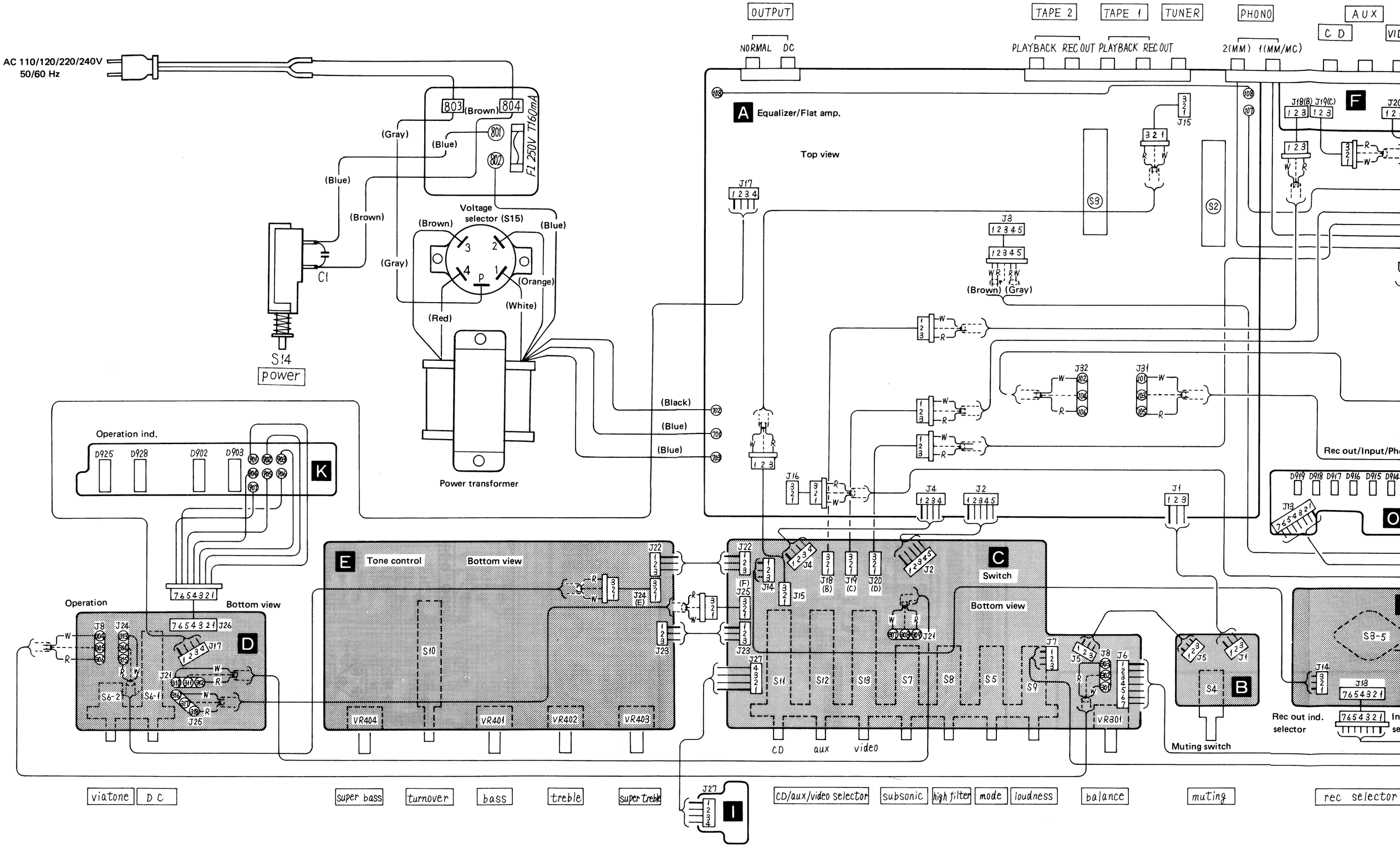
1. Input select switch . . . . . tuner
2. Operation switch . . . . . DC
3. DC voltmeter (percision type)

Adjusting items	DC voltmeter connections	VR adjusted	Procedure
Constant voltage power supply	Between TP701 and ground (+B voltage)	VR701	○ Adjust so that voltmeter reading is 17 V.
	Between TP702 and ground (−B voltage)	—	○ Check that voltmeter reading is −17 to −18 V.
DC balance (Buffer)	Between DC output terminal (Lch) and ground	VR601	(1) Set the volume control to minimum (∞). (2) Adjust it to minimum (0 mV) on DC voltmeter in 3 mV range.
	Between DC output terminal (Rch) and ground	VR602	
DC balance (Flat amp)	Between DC output terminal (Lch) and ground	VR501	(1) Set the volume control to minimum (0). (2) Adjust it to minimum (0 mV) on DC vlotmeter in 10 mV range.
	Between DC output (Rch) and ground	VR502	

• Adjustment points



■ PRINTED CIRCUIT BOARDS WIRING CONNECTION DIAGRAM



AM

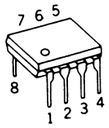
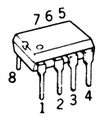
OUTPUT
NORMAL DC
TAPE 2
PLAYBACK REC OUT
TAPE 1
PLAYBACK REC OUT
TUNER
PHONO
2(MM) 1(MM/MC)
AUX
C D
VIDEO
G N D
Amorphous MC transformer
T2
T3
Refer to Fig. 7 on page 5 for amorphous MC transformer's connection.
A Equalizer/Flat amp.
Top view
Input terminals
F
J18(B) J19(C) J20(D)
J15
J17
J3
(Brown) (Gray)
S3
S2
(Black)
(Blue)
(Blue)
(Blue)
Orange)
ite)
F1 250V T160mA
J32
J31
J16
J4
J2
J1
Rec out/Input/Phono selector ind.
D919 D918 D917 D916 D915 D914 D913 D912 D911 D910 D909
D908 D907 D906 D905 D904
J13
J11
J9
G
S1
Phono input selector
Lamp.
J
Brown
Gray
J22
J24 (E)
J23
J25 (F)
J14
J18 (B)
J19 (C)
J20 (D)
J21
C
Switch
Bottom view
J27
S11
S12
S13
S7
S8
S5
S9
J7
J5
J8
J6
VR301
VR402
VR403
CD
aux
video
S4
B
Muting switch
N
S3-5
J14
J13
J12
Rec out ind. selector
Input ind. selector
M
S2-5
J12
J11
J10
L
S1-7
J10
J9
Phono input ind selector
H
VR302
J6
J7
J8
J27
I
treble
super treble
CD/aux/video selector
subsonic
high filter
mode
loudness
balance
muting
rec selector
input selector
phono selector
volume

SU-A4MK2 SU-A4MK2

■ PRINTED CIRCUIT BOARDS

▓ Ground (Earth) lines

- Terminal guide of transistors, diodes and IC's

SVINJM4556DA SVINJ4559DSM SVINJ4559DMM	AN6552
	
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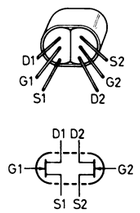	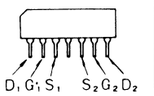
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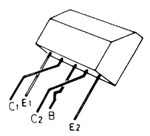	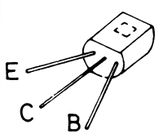
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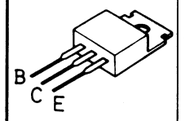	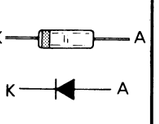
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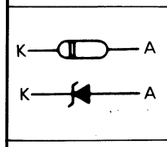
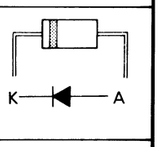
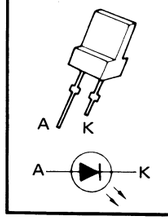
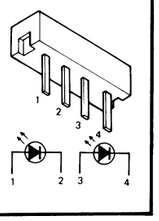
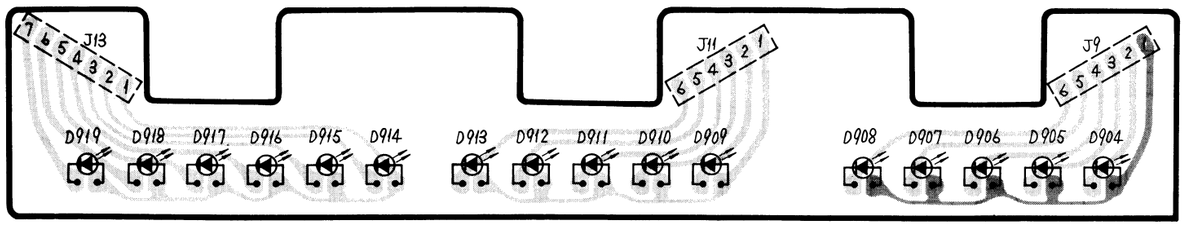
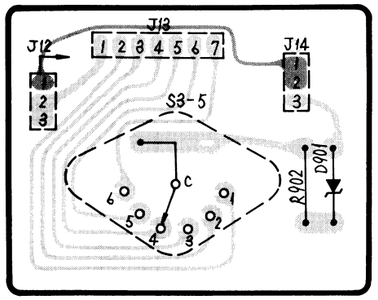
	
LN846RP	LN0202RP2 LN0202YP2
	

O REC SELECTOR/INPUT SELECTOR/PHONO SELECTOR INDICATORS

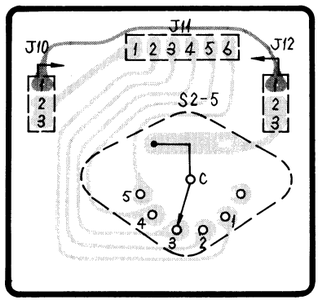

J13
J11
J9
D919 D918 D917 D916 D915 D914 D913 D912 D911 D910 D909 D908 D907 D906 D905 D904
(tape dubbing 2▸1) (tape dubbing 1▸2) (off) (phono)(tuner)(CD/aux/video) (tape 2)(tape 1)(phono)(tuner)(CD/aux/video)
(phono 2 MM 2.5mV) (phono 1 MM 1mV) (phono 1 MM 2.5mV) (phono 1 MC 250μV) (phono 1 MC 70μV)
REC SELECTOR IND
INPUT SELECTOR IND
PHONO SELECTOR IND

N REC IND. SELECTOR



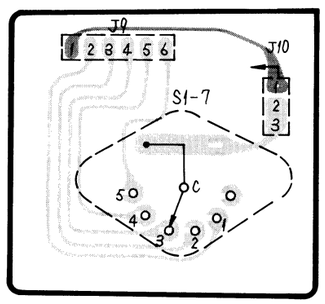
REC SELECTOR
① CD/aux/video
② tuner
③ phono
④ off
⑤ tape dubbing 1 ▸ 2
⑥ tape dubbing 2 ▸ 1

M INPUT IND. SELECTOR



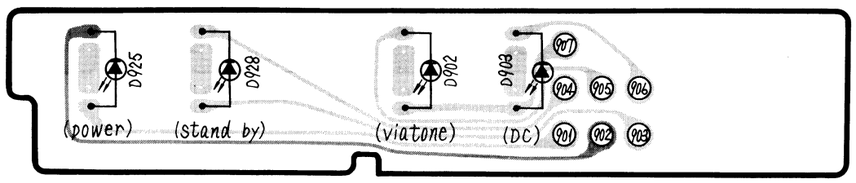
INPUT SELECTOR
① CD/aux/video
② tuner
③ phono
④ tape 1
⑤ tape 2

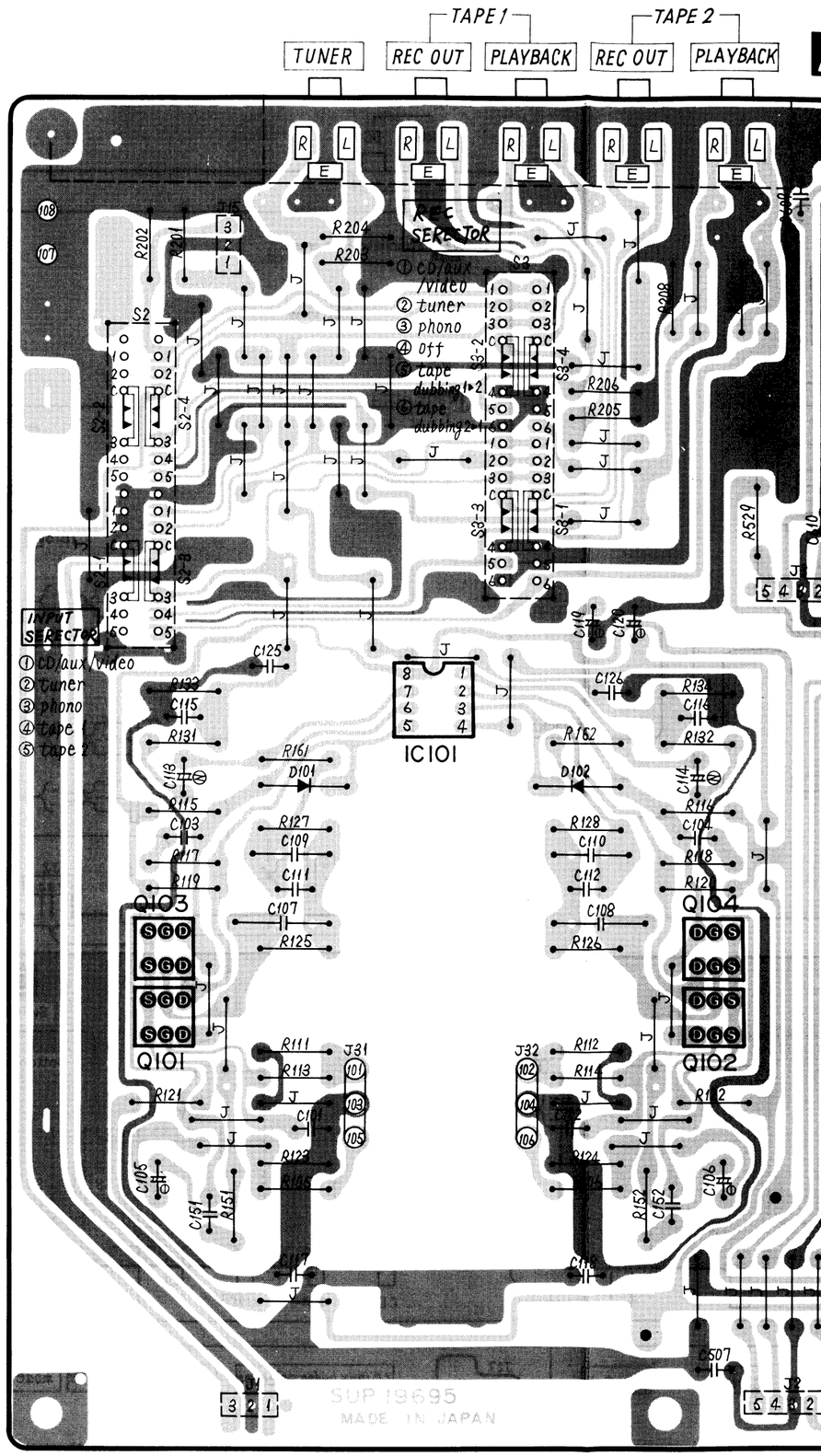
L PHONO INPUT IND. SELECTOR



PHONO SELECTOR
① phono 1 MC (70μV)
② phono 1 MC (250μV)
③ phono 1 MM (2.5mV)
④ phono 1 MM (1mV)
⑤ phono 2 MM (2.5mV)

K OPERATION INDICATORS





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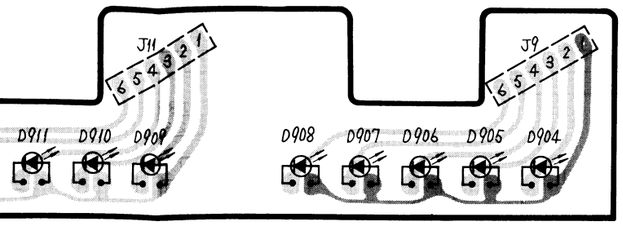


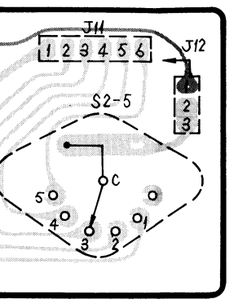
)(phono)(tuner)(CD/aux/video)

(phono 2 (phono1 (phono1 (phono1 (phono1
MM 2.5mV) MM 1mV) MM 2.5mV) MC 250μV) MC 70μV)

SELECTOR IND

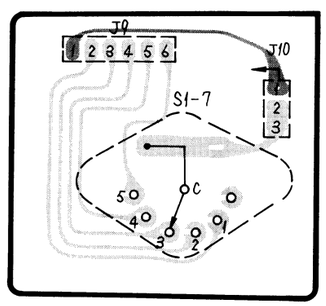
PHONO SELECTOR IND

NPUT IND. SELECTOR



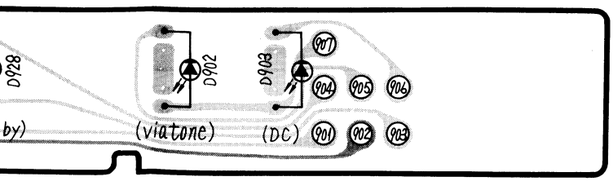
INPUT SELECTOR
① CD/aux/video
② tuner
③ phono
④ tape 1
⑤ tape 2

L PHONO INPUT IND. SELECTOR

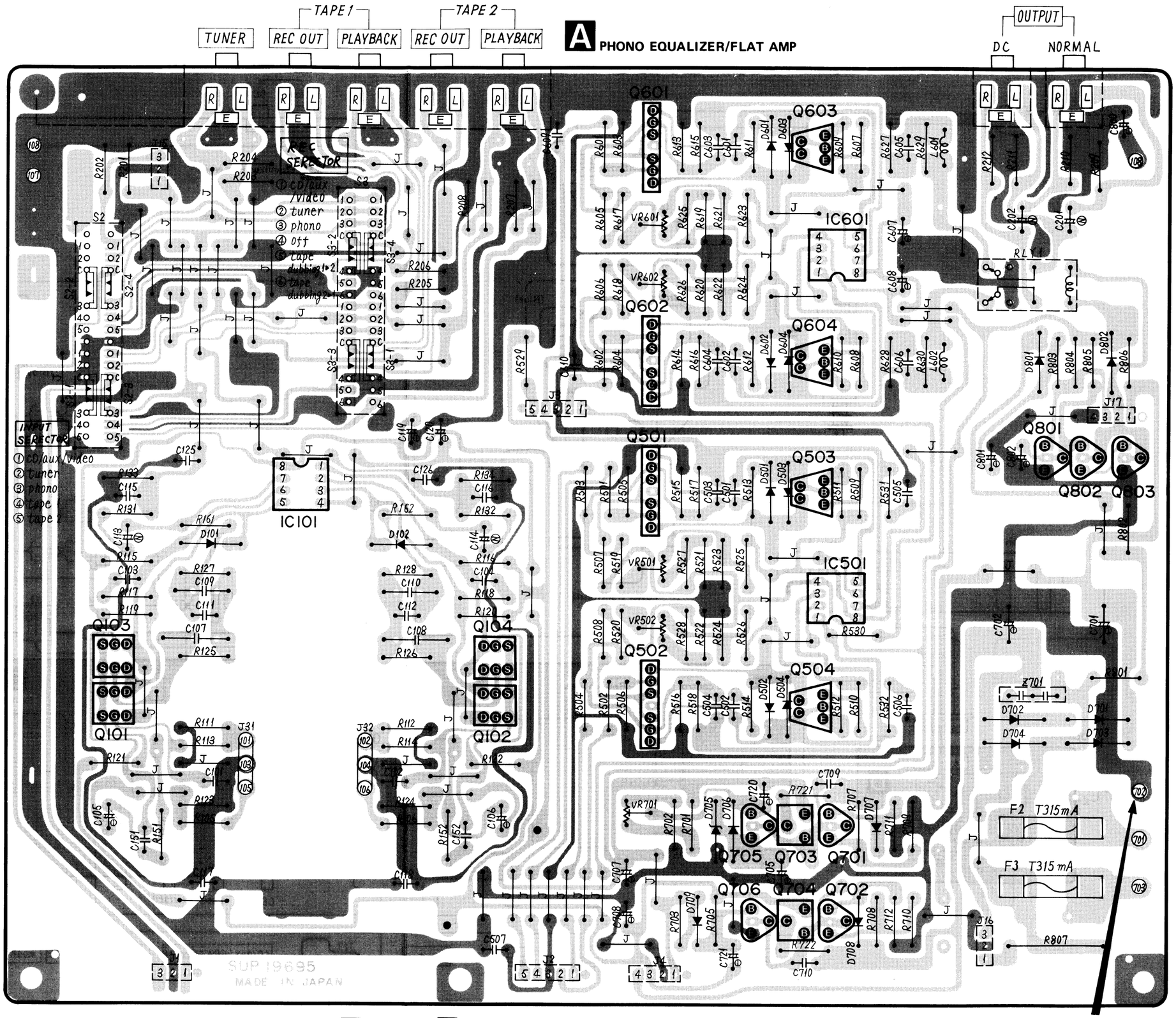


PHONO SELECTOR
① phono 1 MC (70μV)
② phono 1 MC (250μV)
③ phono 1 MM (2.5mV)
④ phono 1 MM (1mV)
⑤ phono 2 MM (2.5mV)

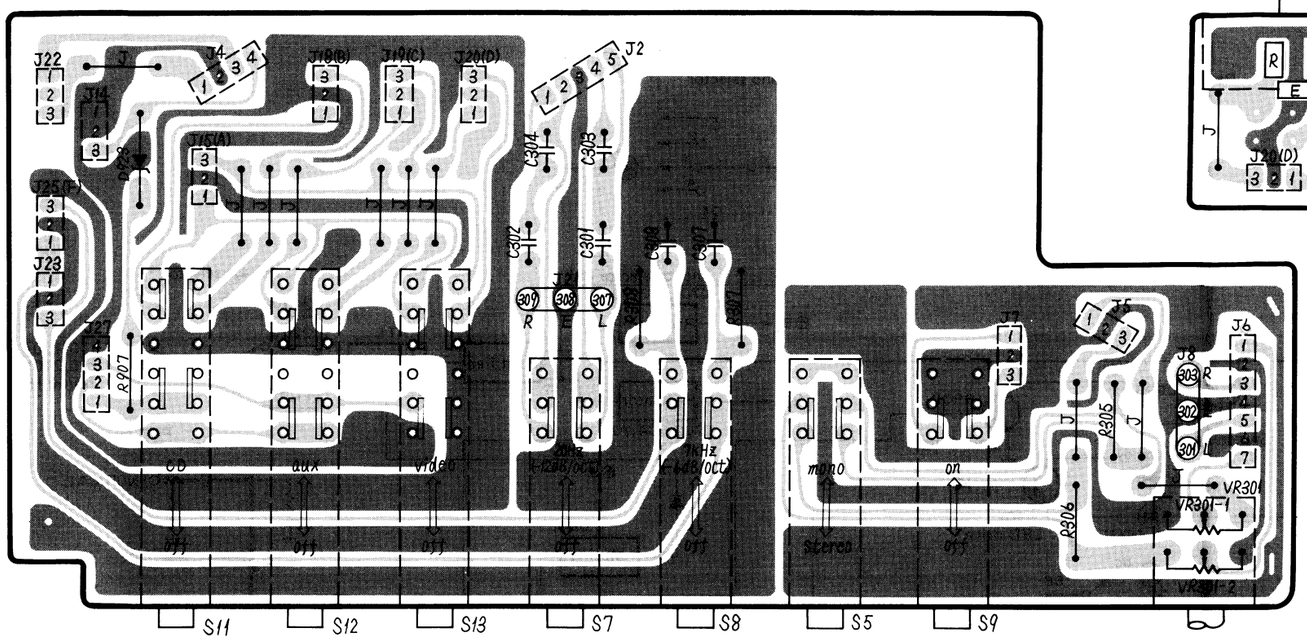
CATORS



A PHONO EQUALIZER/FLAT AMP

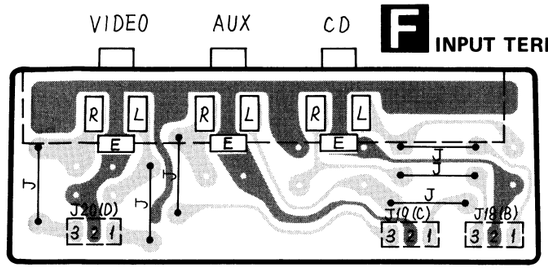


C SWITCHES

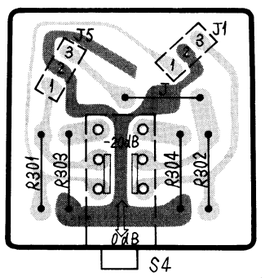


CD AUX VIDEO SUBSONIC HIGH FILTER MODE LOUDNESS BALANCE

F INPUT TERMINAL

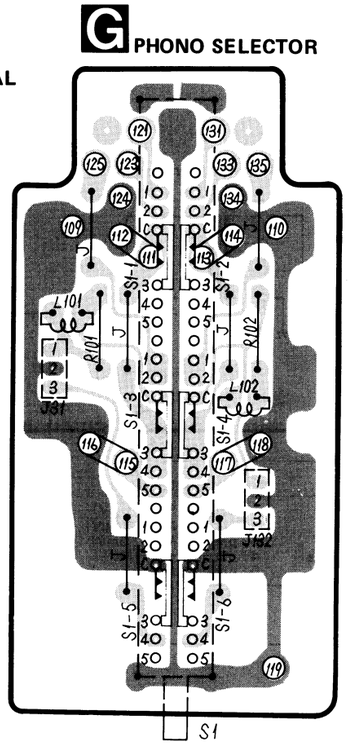


B MUTING SWITCH



MUTING

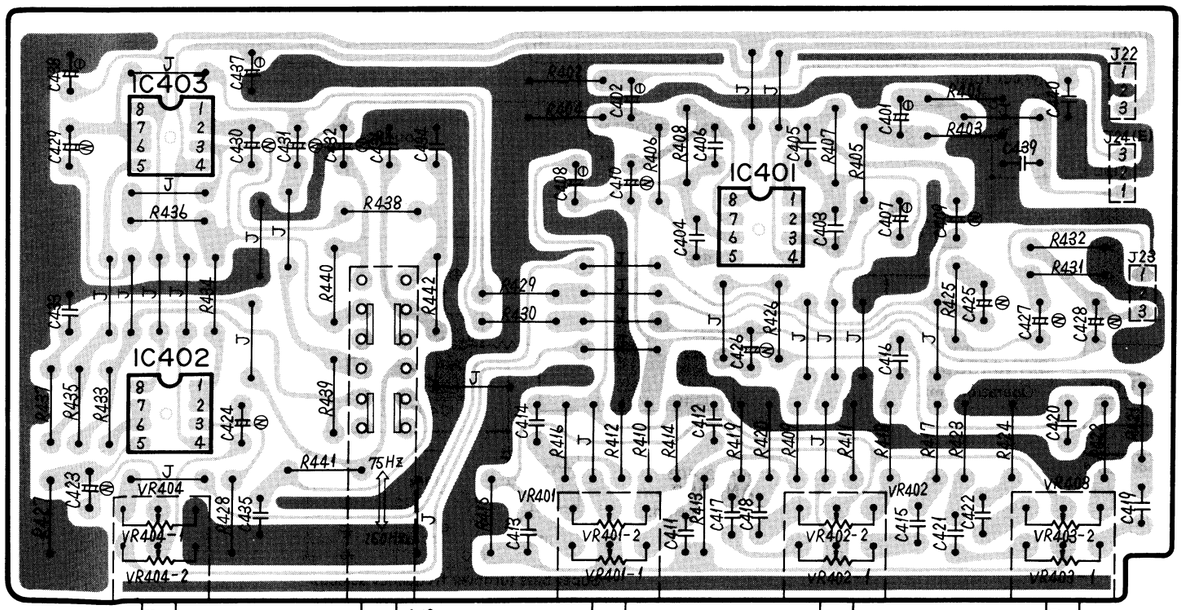
G PHONO SELECTOR



PHONO SELECTOR

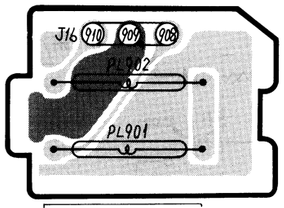
PHONO SELECTOR
① phono 1 MC (70μV)
② phono 1 MC (250μV)
③ phono 1 MM (2.5mV)
④ phono 1 MM (1mV)
⑤ phono 2 MM (2.5mV)

E TONE CONTROL



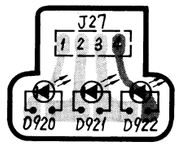
SUPER BASS TURNOVER (12dB/oct) BASS TREBLE SUPER TREBLE

J LAMP



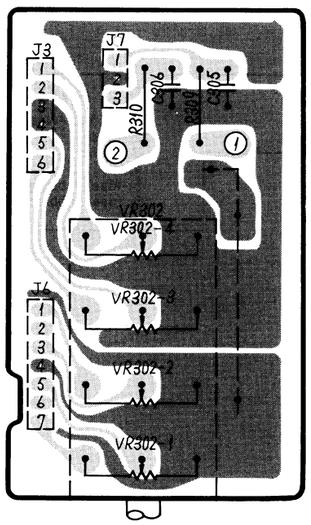
AMORPHOUS IND

I CD/AUX/ VIDEO IND



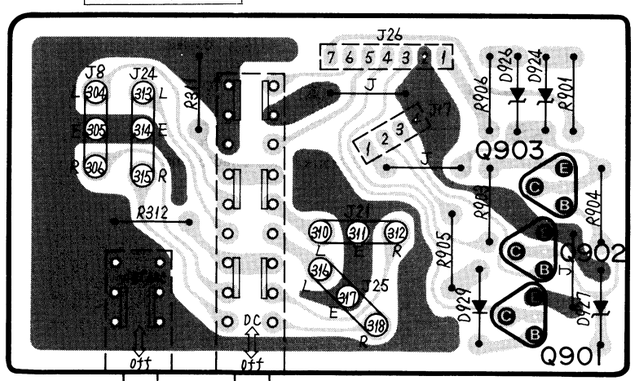
(CD) (aux)(video)

H VOLUME



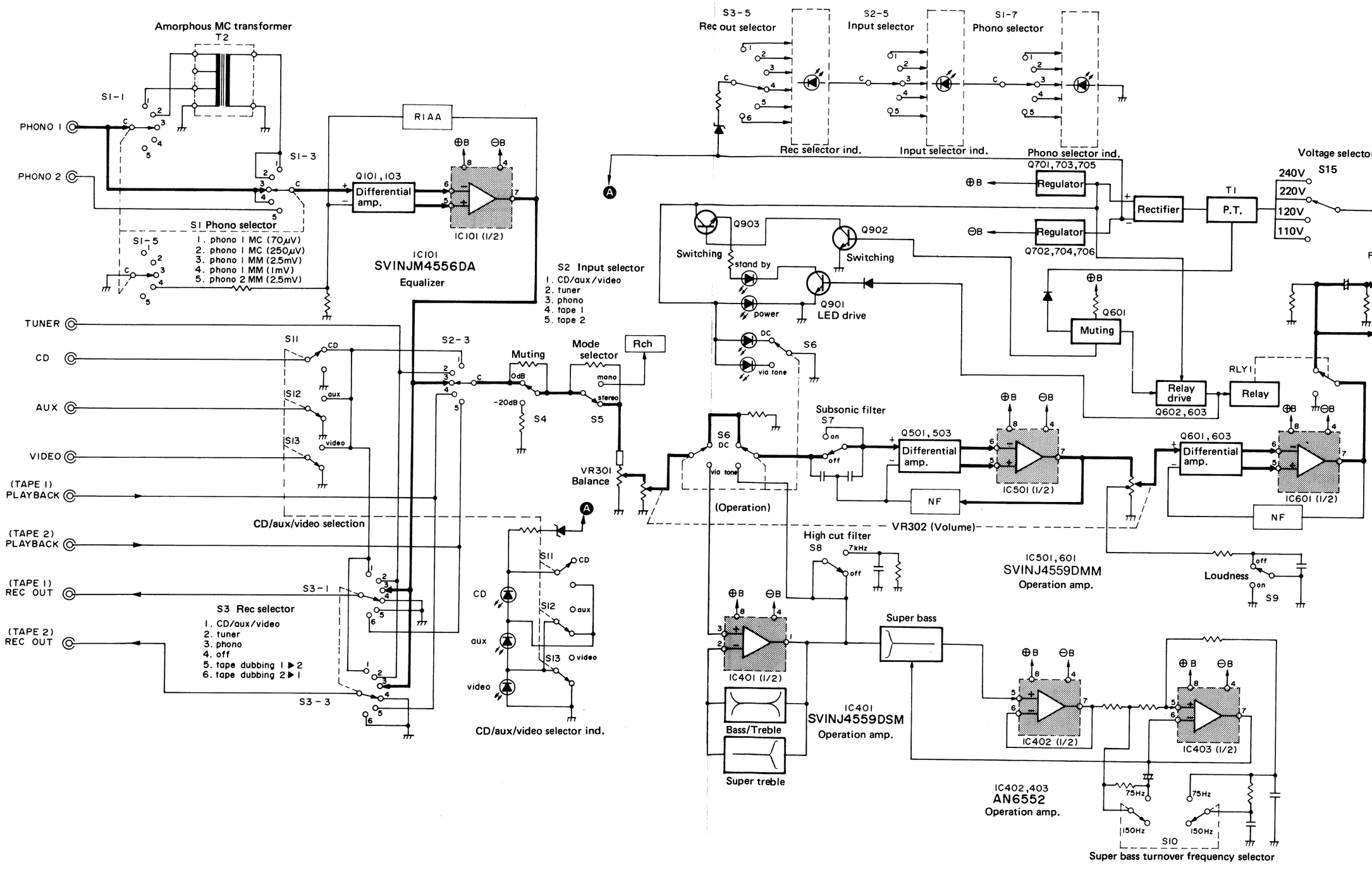
VOLUME

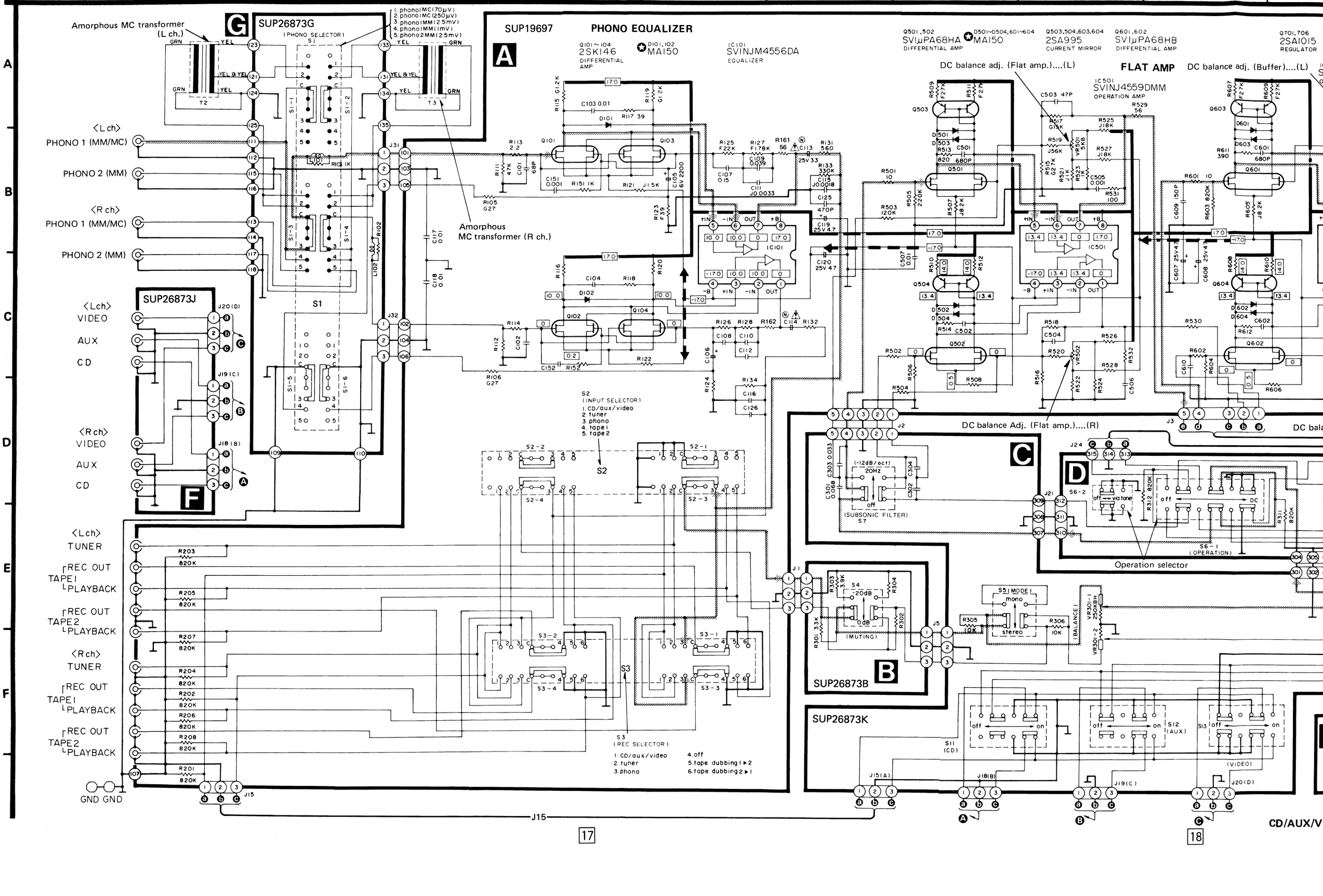
D OPERATION



VIATONE DC

■ BLOCK DIAGRAM




SUP19697 PHONO EQUALIZER
SUP26873G
(PHONO SELECTOR)
SUP26873J
SUP26873B
SUP26873K
Amorphous MC transformer (L ch.)
Amorphous MC transformer (R ch.)
1. phono MC(70μV)
2. phono MC(250μV)
3. phono MM(2.5mV)
4. phono MM(1mV)
5. phono 2 MM(2.5mV)
Q101~104 2SK146 DIFFERENTIAL AMP
D101,102 MA150
IC101 SVINJM4556DA EQUALIZER
Q501,502 SVIμPA68HA DIFFERENTIAL AMP
D501~D504,601~604 MA150
Q503,504,603,604 2SA995 CURRENT MIRROR
Q601,602 SVIμPA68HB DIFFERENTIAL AMP
Q701,706 2SA1015 REGULATOR
FLAT AMP
IC501 SVINJ4559DMM OPERATION AMP
DC balance adj. (Flat amp.)....(L)
DC balance Adj. (Flat amp.)....(R)
DC balance adj. (Buffer)....(L)
<L ch>
PHONO 1 (MM/MC)
PHONO 2 (MM)
<R ch>
PHONO 1 (MM/MC)
PHONO 2 (MM)
<Lch> VIDEO AUX CD
<Rch> VIDEO AUX CD
<Lch> TUNER
TAPE1 REC OUT / PLAYBACK
TAPE2 REC OUT / PLAYBACK
<Rch> TUNER
TAPE1 REC OUT / PLAYBACK
TAPE2 REC OUT / PLAYBACK
GND GND
S1
S2 (INPUT SELECTOR)
1. CD/aux/video
2. tuner
3. phono
4. tape1
5. tape2
S3 (REC SELECTOR)
1. CD/aux/video
2. tuner
3. phono
4. off
5. tape dubbing 1 ▶ 2
6. tape dubbing 2 ▶ 1
S4 -20dB 0dB (MUTING)
S5 (MODE) mono stereo
(BALANCE)
(-12dB/oct) 20Hz off (SUBSONIC FILTER) S7
S6-1 (OPERATION)
S6-2
Operation selector
S11 (CD)
S12 (AUX)
S13 (VIDEO)
J15 J15(A) J18(B) J19(C) J20(D)
J15

Q501,502 SV1μPA68HA ✪D501~D504,601~604 MA150 DIFFERENTIAL AMP
Q503,504,603,604 2SA995 CURRENT MIRROR
Q601,602 SV1μPA68HB DIFFERENTIAL AMP
Q701,706 2SA1015 REGULATOR
✪D801,802,706 MA150
Q704 2SA913 REGULATOR
Q705,801,802,803,702 2SC1815 REGULATOR & RELAY DRIVE
D705 SVDMZ307A
Q703 2SC1913 REGULATOR
D707,708,709 MA27W-A
D701~704 SVDSRIK2 RECT

FLAT AMP

DC balance adj. (Flat amp.)....(L)
DC balance adj. (Buffer)....(L)
IC501 SVINJ4559DMM OPERATION AMP
IC601 SVINJ4559DMM OPERATION AMP
Voltage regulator (+B) adj. point
Voltage regulator adj.
RELAY DRIVE
MUTING
TP701 +17V line
TP702
VOLTAGE REGULATOR
Voltage regulator (−B) adj. point
DC balance Adj. (Flat amp.)....(R)
DC balance adj. (Buffer) ....(R)
D923,924,926,927 SVDMZ3I2 12V ZENER
Q901~903 2SC1815 SWITCHING & LED DRIVE
D929 MA27W-A

PRE OUT
Lch
NORMAL
Rch
Lch
DC
Rch

GROUND POINT

• Power source
For [XA] area.

T1 RED BRN ORG WHT BLU
S15
240 220 120 110 0
802
F1 T160mA

12V 50mA
PL901
PL902
AMORPHOUS IND
SUP26873P

• Power source
For continental Europe.

SUP26873I
803 804 802 801
F1 250V T160mA
S14
C1 0.01

TONE CONTROL

IC401 SVINJ4559DSM OPERATION AMP

C

(−12dB/oct) 20Hz off
(SUBSONIC FILTER) S7

D

S6-2 off via tone off DC
S6-1 (OPERATION)
Operation selector

E

H

SUP26873C
(VOLUME)
VR302-1 50KB
VR302-2 50KB
VR302-3
VR302-4
S9 (LOUDNESS)

B

SUP26873B
S4 −20dB 0dB (MUTING)
S5 (MODE) mono stereo
VR301-1 250KBH (BALANCE)
VR301-2

K

SUP26873D
SUP26873F
D925 (POWER)
D928 (STANDBY)
D902 (VIA TONE)
D903 (DC)
D903,925 LN0202RP2 DC & POWER IND
D902,928 LN0202YP4 VIA TONE & STANDBY IND
OPERATION/ STAND-BY INDICATORS

I

SUP26873H
D920~922 LN846RP
D920 (CD) D921 (AUX) D922 (VIDEO)
CD/AUX/VIDEO INDICATORS

S11 (CD) S12 (AUX) S13 (VIDEO)
S8 (HIGH FILTER) −6dB/oct 7kHz off

■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

1. This is the basic circuit diagram (For continental Europe) of this unit.
   Note that part of the circuit is subject to change depending on the area.
2. **S1-1 ~ S1-7 :** Phono selector switch in **"phono 1(MM) 2.5mV"** position.
   phono 2(MM) 2.5mV ↔ phono 1(MM) 1mV ↔ phono 1(MM) 2.5mV ↔ phono 1(MC) 250μV ↔ phono 1(MC) 70μV
3. **S2-1 ~ S2-5 :** Input selector switch in **"phono"** position.
   tape 2 ↔ tape 1 ↔ phono ↔ tuner ↔ aux/CD/video
4. **S3-1 ~ S3-5 :** Rec selector switch in **"off"** position.
   tape dubbing 2 ▶ 1 ↔ tape dubbing 1 ▶ 2 ↔ off ↔ phono ↔ tuner ↔ CD/aux/video
5. **S4:** Muting switch in **"0dB"** position.
   0dB ↔ –20dB
6. **S5:** Mode switch in **"stereo"** position.
   stereo ↔ mono
7. **S6-1, S6-2:** Operation switch in **"DC"** position.
   via tone ↔ DC
8. **S7:** Subsonic filter switch in **"off"** position.
   off ↔ 20Hz
9. **S8:** High cut filter switch in **"off"** position.
   off ↔ 7kHz
10. **S9:** Loudness switch in **"off"** position.
    off ↔ on
11. **S10:** Super bass turnover frequency switch in **"150Hz"** postion.
    150Hz ↔ 75Hz
12. **S11 ~ 13:** aux, CD or video input selector switch in **"CD"** position.
    CD(S11) ↔ aux(S12) ↔ video(S13)
13. **S14:** Power source switch in **"on"** position.
14. **S15:** Voltage selector switch **"220V"** position.
    240V ↔ 220V ↔ 120V ↔ 110V
15. Same circuit is used for both L and R channels. For the resistance and capacity of R channel (lower of circuit diagram), refer to L channel. For the voltage value, refer to R channel.
16. ▭ Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the vlotage values, depending on the internal impedance of the DC circuit tester.
17. ▒▒ Phono signal lines of left channel.
18. ▬▶ Positive (+B) voltage lines.
19. ▬▬▶ Negative (–B) voltage lines.
20. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

- The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement parts, please use the part No. in the replacement parts list.

• **Power source**
For [XA] area.

• **Power source**
For continental Europe.

TONE CONTROL

SUP26873A

SUP26873D

SUP26873F

SUP26873L

SUP26873M

SUP26873N

SUP26873E

SUP26873P

OPERATION/ STAND-BY INDICATORS

■ RESISTORS & CAPACITORS

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for saftey. When replacing any of these components use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The unit of resistance is OHM (Ω). K = 1000Ω, M = 1000KΩ
6. The unit of capacitance is MICROFARAD (μF) P = 10^{-6} μF

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value
ERG	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value

Numbering System of Capacitor

Example

ECKD	1H	102	M	D
Type	Volgage	Value	Tolerance	Peculiarity
ECEA	50	M	R47	R
Type	Voltage	Peculiarity	Value	Special use

Resistor Type	Wattage	Tolerance
ERD : Carbon ERG : Metal Oxide ERO : Metal Film ERC : Solid ERQ : Fuse Type Metal	14 : 1/4W 25 : 1/4W 2A : 2W 2F : 1/4W	F : ±1% G : ±2% J : ±5% K : ±10%

Capacitor Type	Voltage		Tolerance
	ECEA Type	Others	
ECEA : Electrolytic ECEA : Non Pelar Electrolytio ECCD : Ceramic ECKD : Ceramic ECQM : Polyester ECQP : Polypropylene	OJ : 6.3V 1A : 10V 1C : 16V 1E : 25V 1H : 50V 1V : 35V 50 : 50V 25 : 25V	1H : 50V 2H : 500V KC : 400V AC 1 : 100V	J : ±5% K : ±10% Z : +80%, −20% P : +100%, −0%

• RESISTORS

Ref No.	Ⓢ ⚠	Part No.	Value
R101,102	Ⓢ	ERD25FJ102	1K
R105,106		ER025CKG27R0	27
R111,112	Ⓢ	ERD25TJ473	47K
R113,114	Ⓢ	ERD25FJ2R2	2.2
R115,116		ER025CKF1201	1.2K
R117,118	Ⓢ	ERD25FJ390	39
R119,120	Ⓢ	ER025CKF1201	1.2K
R121,122	Ⓢ	ER025CKF1501	1.5K
R123,124	Ⓢ	ER025CKF39R0	39
R125,126	Ⓢ	ER025CKF2202	22K
R127,128	Ⓢ	ER025CKF1781	1.78K
R131,132	Ⓢ	ERD25FJ561	560
R133,134	Ⓢ	ERD25TJ334	330K
R151,152	Ⓢ	ERD25FJ102	1K
R161, 162	Ⓢ	ERD25FJ560	56
R201,202	Ⓢ	ERD25TJ824	820K
R203,204	Ⓢ	ERD25TJ824	820K
R205,206	Ⓢ	ERD25TJ824	820K
R207,208	Ⓢ	ERD25TJ824	820K
R209,210	Ⓢ	ERD25TJ824	820K
R211,212	Ⓢ	ERD25TJ824	820K
R301,302	Ⓢ	ERD25TJ333	33K
R303,304	Ⓢ	ERD25FJ392	3.9K
R305,306	Ⓢ	ERD25FJ103	10K
R307,308	Ⓢ	ERD25TJ824	820K
R309,310	Ⓢ	ERD25FJ222	2.2K
R311,312	Ⓢ	ERD25TJ824	820K
R401,402	Ⓢ	ERD25TJ474	470K
R403,404	Ⓢ	ERD25TJ474	470K
R405,406	Ⓢ	ERD25FJ561	560
R407,408	Ⓢ	ERD25TJ474	470K
R409,410	Ⓢ	ERD25TJ333	33K
R411,412	Ⓢ	ERD25FJ562	5.6K
R413,414	Ⓢ	ERD25TJ274	270K
R415,416	Ⓢ	ERD25TJ223	22K
R417,418	Ⓢ	ERD25TJ153	15K
R419,420	Ⓢ	ERD25FJ272	2.7K
R421,422	Ⓢ	ERD25FJ472	4.7K
R423,424	Ⓢ	ERD25FJ152	1.5K
R425,426	Ⓢ	ERD25TJ153	15K
R427,428	Ⓢ	ERD25TJ563	56K
R429,430	Ⓢ	ERD25FJ822	8.2K
R431,432	Ⓢ	ERD25FJ392	3.9K
R433,434	Ⓢ	ERD25FJ472	4.7K
R435,436	Ⓢ	ERD25TJ123	12K
R437,438	Ⓢ	ERD25TJ153	15K
R439,440	Ⓢ	ERC14GK335	3.3M
R441,442	Ⓢ	ERC14GK335	3.3M
R501,502	Ⓢ	ERD25FJ100	10
R503,504	Ⓢ	ERD25TJ124	120K
R505,506	Ⓢ	ERD25TJ224	220K
R507,508	Ⓢ	ER025CKF8201	8.2K
R509,510	Ⓢ	ER025CKF2701	2.7K
R511,512	Ⓢ	ER025CKF2701	2.7K
R513,514	Ⓢ	ERD25FJ821	820
R515,516	Ⓢ	ER025CKF2701	2.7K
R517,518	Ⓢ	ER025CKF1502	15K
R519,520	Ⓢ	ER025CKF5602	56K
R521,522	Ⓢ	ER025CKF1001	1K
R523,524	Ⓢ	ER025CKF1001	1K
R525,526	Ⓢ	ER025CKF1802	18K
R527,528	Ⓢ	ER025CKF1802	18K
R529,530	Ⓢ	ERD25FJ560	56
R531,532	Ⓢ	ERD25FJ101	100
R601,602	Ⓢ	ERD25FJ100	10
R603,604	Ⓢ	ERD25TJ824	820K
R605,606	Ⓢ	ER025CKF8201	8.2K
R607,608	Ⓢ	ER025CKF2701	2.7K
R609,610	Ⓢ	ER025CKF2701	2.7K
R611,612	Ⓢ	ERD25FJ821	820
R613,614	Ⓢ	ER025CKF3301	3.3K
R615,616	Ⓢ	ER025CKF3001	3K
R617,618	Ⓢ	ER025CKF3902	39K
R619,620	Ⓢ	ER025CKF1001	1K
R621,622	Ⓢ	ER025CKF1001	1K
R623,624	Ⓢ	ER025CKF1802	18K
R625,626	Ⓢ	ER025CKF1802	18K
R627,628	Ⓢ	ERD25FJ101	100
R629,630	Ⓢ	ERD25FJ560	56
R701	Ⓢ	ER025CKF1202	12K
R702	Ⓢ	ER025CKF8201	8.2K
R703	Ⓢ	ER025CKF1202	12K
R705	Ⓢ	ER025CKF1202	12K
R707,708	Ⓢ	ERD25FJ271	270
R709,710	Ⓢ	ERD25TJ823	82K
R711,712	Ⓢ	ERD25TJ563	56K
R721,722	⚠	ERD2FCG470	47
R801	Ⓢ	ERD25FJ562	5.6K
R802	Ⓢ	ERD25FJ332	3.3K
R803	Ⓢ	ERD25FJ562	5.6K
R804	Ⓢ	ERD25TJ333	33K
R805	Ⓢ	ERD25TJ564	560K
R806	Ⓢ	ERD25FJ151	150
R807	Ⓢ ⚠	ERG2ANJ391	390
R901	Ⓢ	ERD25FJ681	680
R902	Ⓢ	ERD25FJ561	560
R903	Ⓢ	ERD25FJ471	470
R904	Ⓢ	ERD25TJ123	12K
R905	Ⓢ	ERD25FJ103	10K
R906	Ⓢ	ERD25FJ681	680
R907	Ⓢ	ERD25FJ561	560

• CAPACITORS

Ref. No.	Part No.	Value
CAPACITORS		
C1 ⚠	ECKDKC103PF2	0.01
C2[XA]only ⚠	ECKDKC103PF2	0.01
C101.102 Ⓢ	ECCD1H680K	68p
C103.104	ECQM1H103KV	0.01
C105.106 Ⓢ	ECEA0JS222	2200
C107.108	ECQP1154FZ	0.15
C109.110	ECQP1393FZ	0.039
C111.112	ECQM1H332JV	0.0033
C113.114 ⚠	ECEA1EN3R3S	3.3
C115.116	ECQM1H182JV	0.0018
C117.118 Ⓢ	ECKD1H103ZF	0.01
C119.120 Ⓢ	ECEA25Z4R7	4.7
C125.126 Ⓢ	ECKD1H471KB	470p
C151.152 Ⓢ	ECKD1H102KB	0.001
C201.202 ⚠	ECEA1HN010S	1
C301.302	ECQM1H683KV	0.068
C303.304	ECQM1H333KV	0.033
C305.306	ECQM1H154KV	0.15
C307.308	ECQM1H103KV	0.01
C401.402 Ⓢ	ECEA50M1R	1
C403.404 Ⓢ	ECCD1H390K	39p
C405.406 Ⓢ	ECCD1H220K	22p
C407.408 Ⓢ	ECEA50Z1	1
C409.410 ⚠	ECEA1EN3R3S	3.3
C411.412	ECQM1H123KV	0.012
C413.414	ECQM1H683KV	0.068
C415.416	ECQM1H272KV	0.0027
C417.418	ECQM1H183KV	0.018
C419.420 Ⓢ	ECKD1H681KB	680p
C421.422	ECQM1H472KV	0.0047
C423.424 ⚠	ECEA1HNR47S	0.47
C425.426 ⚠	ECEA1EN3R3S	3.3
C427.428 ⚠	ECEA1EN3R3S	3.3
C429.430 ⚠	ECEA1HN010S	1
C431.432 ⚠	ECEA1HN010S	1
C433.434	ECQM1H683KV	0.068
C435.436	ECQM1H683KV	0.068
C437.438 Ⓢ	ECEA25Z4R7	4.7
C439.440 Ⓢ	ECCD1H100K	10p
C501.502 Ⓢ	ECKD1H681KB	680p
C503.504 Ⓢ	ECKD1H470K	47p
C505.506	ECQM1H102KV	0.001
C507 Ⓢ	ECKD1H103ZF	0.01
C601.602 Ⓢ	ECKD1H681KB	680p
C603.604 Ⓢ	ECCD1H221K	220p
C605.606	ECQM1H222KV	0.0022
C607.608 Ⓢ	ECEA25Z4R7	4.7
C609.610 Ⓢ	ECCD1H151K	150p
C701.702 Ⓢ	ECEA1VS222	2200
C705 Ⓢ	ECEA1CS330	33
C707.708 Ⓢ	ECEA1ES470	47
C709.710 Ⓢ	ECKD1H102KB	0.001
C720.721 Ⓢ	ECEA1HS100	10
C800 Ⓢ	ECEA1AS101	100
C801 Ⓢ	ECEA50Z3R3	3.3
C802 Ⓢ	ECEA1AS101	100

■ REPLACEMENT PARTS LIST

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ"mark is service standard parts and may differ from production parts.
5. The parenthesized numbers in the column of description stand for the quantity per set.

Areas
*[E] is available in Sca
*[EH] is available in H
*[EB] is available in E
*[EF] is available in F
*[EK] is available in U
*[Ei] is available in It
*[XA] is available in S
East and Centr

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC101	SVINJM4556DA	Equalizer
IC401	SVINJ4559DSM	Operation Amp.
IC402.403	AN6552F	Operation Amp.
IC501.601	SVINJ4559DMM	Operation Amp.
TRANSISTORS		
Q101 ~ 104	2SK146—BL	Differential Amp.
Q501.502	SVIUPA68HA	Differential Amp.
Q503.504.603.604	2SA995N—Q	Current Mirror
Q601.602	SVIUPA68HB	Differential Amp.
Q701.706	2SA1015—Y	Regulator
Q702.705.801. 802.803	2SC1815—Y	Regulator, Relay Drive
Q703	2SC1913B—Q	Regulator
Q704	2SA913B—Q	Regulator
Q901.902.903	2SC1815—Y	Switching, L.E.D Drive
D101.102. 501~504. 601~604.706. 801.802 Ⓢ	MA162A	Bias
D701~704 Ⓢ⚠	SVDSR1K2	Rectifier
D705	SVDMZ307A	7V, Zener
D707~709.929	MA27W—A	Bias
D901.923.924. 926.927	SVDMZ312	12V, Zener
D902.928	LN0202YP4	L.E.D,(Via Tone. Stand-by)
D903.925	LN0202RP2	L.E.D,(DC. Power)
D904~922	LN846RP	L.E.D,(Phono. Input and Rec Selector)
COILS		
L101.102	SLQW471—1P2	Choke
L601.602	SLQX101—2D	Choke
TRANSFORMERS		
T1 ⚠	SLT5L173	Power Source
T2, 3	SLTUA4MK2N	Amorphous MC Transformer
VARIABLE RESISTORS		
VR301	EWGGCA067252	Balance, 250kΩ (BH)
VR302	EWI10A0491C3	Volume, 50kΩ(B)
VR401	EWGGCY067530	Bass, 100kΩ(C)
VR402.403	EWGGC0067C15	Treble, Super Treble, 100kΩ(C)
VR404	EWKKMA065B15	Super Bass, 100kΩ (B)
VR501.502.601. 602	EVMH1GA00B53	DC Balance Adj., 5kΩ(B)
VR701	EVTR4SA00B53	Voltage Regulator, 5kΩ(B)

Ref. No.	Part No.	Description
COMPONENT COMBINATION		
Z701	SXRFS203ZSM	0.01μF(×2)
RELAY		
RLY1	SSY115	Muting
LAMPS		
PL901.902	XAMR85S15	Amorphous Ind., (50mA, 12V)
FUSES		
F1 ⚠	XBA2C016TRO	T160mA, 250V
F2.3 ⚠	XBA2C03TRO	T315mA, 250V
SWITCHES		
S1-1~1-6	ESA3370B	Phono Selector
S1-7	ESA26523	Phono Selector
S2-1~2-4	ESA3369B	Input Selector
S2-5	ESA2682	Input Selector
S3-1~3-4	ESA3368B	Rec Selector
S3-5	ESA26559	Rec Selector
S4	SSH177	Muting
S5.7~9.11~13	SSH711	Mode, Subsonic Filter, High Filter, Loudness, CD / Aux/Video Selector
S6-1,6-2	SSH2057	Operation
S10	SSH159	Super Bass Turnover Frequency
S14[XA]only ⚠	ESB9997S	Power Source
S14 ⚠ [other areas]	ESB99399S	Power Source
S15 ⚠	ESE3787	Voltage Selector
CABINET and CHASSIS PARTS		
1	SGWUA4MK2N	Front Panel, Ass'y (1)
2	SGU187—1	Transparent plate (1)
3	SBN1169	Knob, Volume (1)
4	SBN1167	Knob, Balance. Super treble. Treble. Bass and Super bass (5)
5	SBN1165	Knob, Rec. Input. and Phono selector (3)
6	SNE2083	Lock Pin (2)
7	SHG6131	Spacer (2)
8	SHR9575	Spacer (2)
9	SUB51	Hinge, Operation Lever (1)
10	SUB53	Hinge, Tinted Glass (1)
11	SUB57	Operation Lever, Tinted Glass (1)
12	SUE23—1	Holder, Operation Lever (1)
13	SUB55	Operation Lever (1)
14	SUS223	Spring (1)
15	SGX6919	Spacer (1)

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
16	SHG6129	Spacer (1)
17	SBC313	Button (1)
18	SHG619	Rubber (1)
19	SHP9317	Sheet (1)
20	SUS159	Spring, Button (Muting) (2)
21	SBC219—2	Button, Muting (1)
22	SUS123—3	Spring, Button (10)
23	SBC263	Button (10)
24	SHR401—1	Lock Pin (3)
25	SUS193	Sping, Button (Power) (2)
26	SBC261—1	Button, Power switch (1)
27	SUB63	Gear (1)
28	SUB59	Gear (2)
29	SUB65	Gear (1)
30	SUE25—2	Holder, Gear (1)
31	SDE259—1	Filter, Lamp Case (1)
32	SMP305	Lamp Case (1)
33	SHP9319	Spacer, Knob (6)
34	SMP343	Holder, LED (1)
35(XA)only 35(other areas)	SMCUA4MK2X SMCUA4MK2N	Shield Plate (1) Shield Plate (1)
36	SUV525	Cover (1)
37	SKP73	Upper Board, (Front) (1)
38	SKP75	Upper Board, (Rear) (1)
39	SKS27	Side Board (2)
40	SMNUA4MK2E	Bracket, Power transformer (1)
41	SMC1099	Bracket, Power transformer (1)
42	SHE113	Spacer (5)
43	SJT347	Holder, Fuse (6)
44(XA)only 44(other areas)	SUVUA4MK2X SUV523	Shield Cover (1) Shield Cover (1)
45(EK)only	SHR129	Bushing, AC Cord (1)
45(other areas)	SHR127	Bushing, AC Cord (1)
46(XA)only ⚠	SJA121	AC Cord (1)
46(EK)only Ⓢ⚠	QFC1205M	AC Cord (1)
46(other areas) ⚠	SJA138—3	AC Cord (1)
47	SUDA41	Spacer, Voltage Selector (2)
48(E)only	SGPUA4MK2E	Rear Panel (1)
48(XA)only	SGPUA4MK2X	Rear Panel (1)
48(other areas)	SGPUA4MK2F	Rear Panel (1)
49	SNE4017—1	Terminal (2)
50	SNTA421—1	Terminal (2)
51	RJT204A	Terminal (2)
52	SNE204—1S	Terminal (2)

ST

parts. Please use this part number for parts order.
d by ⚠ mark have special characteristics important for safety.
only manufacturer's specified parts.
ify the area. Parts without these indications can be used for all areas.
differ from production parts.
escription stand for the quantity per set.

Areas

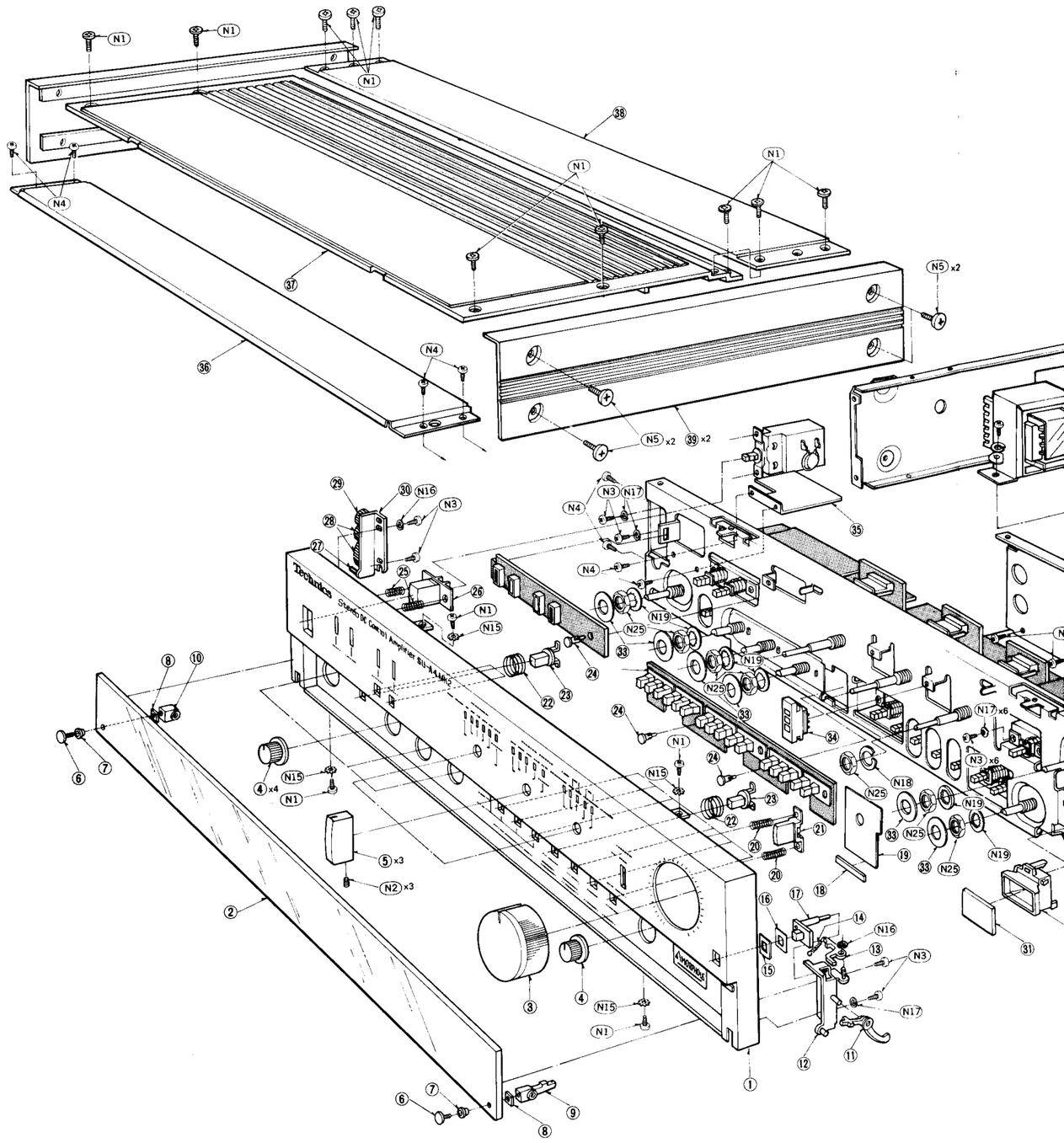
*[E] is available in Scandinavia and Switzerland.
*[EH] is available in Holland.
*[EB] is available in Belgium.
*[EF] is available in France.
*[EK] is available in United Kingdom.
*[Ei] is available in Italy.
*[XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

Ref. No.	Part No.	Description
IPONENT COMBINATION		
	SXRFS203ZSM	0.01μF(×2)
AY		
	SSY115	Muting
IPS		
1.902	XAMR85S15	Amorphous Ind., (50mA, 12V)
ES		
⚠	XBA2C016TRO	T160mA, 250V
⚠	XBA2C03TRO	T315mA, 250V
TCHES		
~1-6	ESA3370B	Phono Selector
	ESA26523	Phono Selector
~2-4	ESA3369B	Input Selector
	ESA2682	Input Selector
~3-4	ESA3368B	Rec Selector
	ESA26559	Rec Selector
	SSH177	Muting
~9.11~13	SSH711	Mode, Subsonic Filter, High Filter, Loudness, CD / Aux/Video Selector
-2	SSH2057	Operation
	SSH159	Super Bass Turnover Frequency
XA]only ⚠	ESB9997S	Power Source
⚠	ESB99399S	Power Source
ther areas]		
⚠	ESE3787	Voltage Selector
INET and CHASSIS PARTS		
	SGWUA4MK2N	Front Panel, Ass'y (1)
	SGU187—1	Transparent plate (1)
	SBN1169	Knob, Volume (1)
	SBN1167	Knob, Balance. Super treble. Treble. Bass and Super bass (5)
	SBN1165	Knob, Rec. Input. and Phono selector (3)
	SNE2083	Lock Pin (2)
	SHG6131	Spacer (2)
	SHR9575	Spacer (2)
	SUB51	Hinge, Operation Lever (1)
	SUB53	Hinge, Tinted Glass (1)
	SUB57	Operation Lever, Tinted Glass (1)
	SUE23—1	Holder, Operation Lever (1)
	SUB55	Operation Lever (1)
	SUS223	Spring (1)
	SGX6919	Spacer (1)

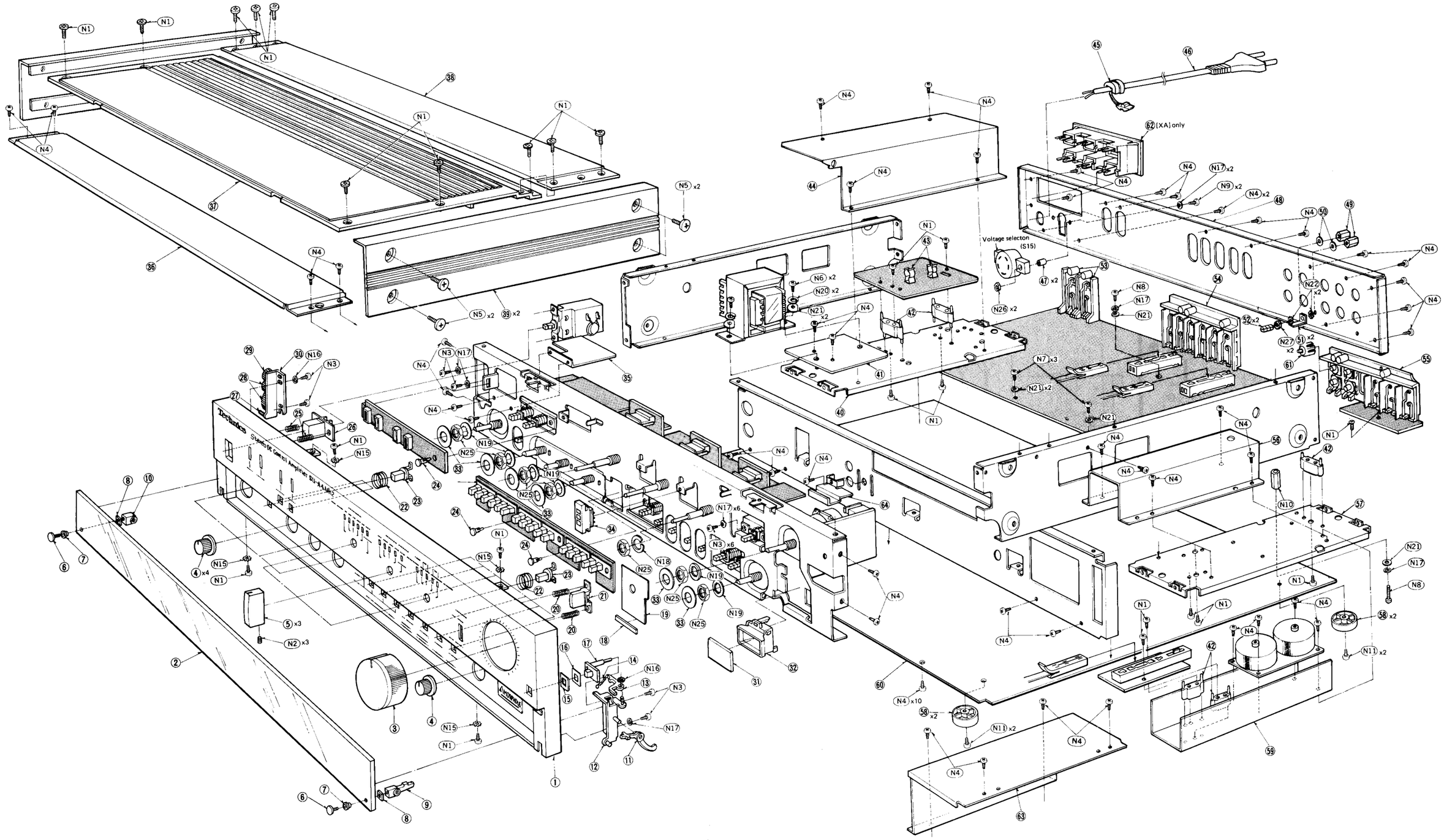
Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
16	SHG6129	Spacer (1)
17	SBC313	Button (1)
18	SHG619	Rubber (1)
19	SHP9317	Sheet (1)
20	SUS159	Spring, Button (Muting) (2)
21	SBC219—2	Button, Muting (1)
22	SUS123—3	Spring, Button (10)
23	SBC263	Button (10)
24	SHR401—1	Lock Pin (3)
25	SUS193	Sping, Button (Power) (2)
26	SBC261—1	Button, Power switch (1)
27	SUB63	Gear (1)
28	SUB59	Gear (2)
29	SUB65	Gear (1)
30	SUE25—2	Holder, Gear (1)
31	SDE259—1	Filter, Lamp Case (1)
32	SMP305	Lamp Case (1)
33	SHP9319	Spacer, Knob (6)
34	SMP343	Holder, LED (1)
35[XA]only	SMCUA4MK2X	Shield Plate (1)
35[other areas]	SMCUA4MK2N	Shield Plate (1)
36	SUV525	Cover (1)
37	SKP73	Upper Board, (Front) (1)
38	SKP75	Upper Board, (Rear) (1)
39	SKS27	Side Board (2)
40	SMNUA4MK2E	Bracket, Power transformer (1)
41	SMC1099	Bracket, Power transformer (1)
42	SHE113	Spacer (5)
43	SJT347	Holder, Fuse (6)
44[XA]only	SUVUA4MK2X	Shield Cover (1)
44[other areas]	SUV523	Shield Cover (1)
45[EK]only	SHR129	Bushing, AC Cord (1)
45[other areas]	SHR127	Bushing, AC Cord (1)
46[XA]only ⚠	SJA121	AC Cord (1)
46[EK]only Ⓢ⚠	QFC1205M	AC Cord (1)
46[other areas] ⚠	SJA138—3	AC Cord (1)
47	SUDA41	Spacer, Voltage Selector (2)
48[E]only	SGPUA4MK2E	Rear Panel (1)
48[XA]only	SGPUA4MK2X	Rear Panel (1)
48[other areas]	SGPUA4MK2F	Rear Panel (1)
49	SNE4017—1	Terminal (2)
50	SNTA421—1	Terminal (2)
51	RJT204A	Terminal (2)
52	SNE204—1S	Terminal (2)

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
53	SJF3247A	Terminal Board (2)
54	SJF3043—1SA	Terminal Board (1)
55	SJF2043—2SA	Terminal Board (1)
56	SMC1071	Shield Cover (1)
57	SMN1871—1	Bracket (1)
58	SKL247—1	Foot (4)
59	SMC1073	Shield Cover (1)
60	SKUUA4MK2N	Bottom Board (1)
61	SJP1103—1	Plug (4)
62(XA)only ⚠	SJS601—2	Socket, AC Outlet (1)
63	SUV523	Shield Cover (1)
SCREWS		
N1 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (24)
N2	XXES4D5FZS	(3)
N3 Ⓢ	XSN3+6S	⊕3×6 (12)
N4	XTBS3+8BFZ1	Tapping with Detent, ⊕3×8 (51)
N5	XSSS5+12F1S	⊕5×12 (4)
N6 Ⓢ	XTB4+10BFZ	Tapping, ⊕4×10 (2)
N7 Ⓢ	XTN3+8B	Tapping, ⊕3×8 (3)
N8 Ⓢ	XSN3+8BVS	⊕3×8 (2)
N9 Ⓢ	XSN3+14BVS	⊕3×14 (2)
N10	SHD3+31S	(1)
N11 Ⓢ	XTB3+12BFZ	Tapping, ⊕3×12 (4)
WASHERS		
N15 Ⓢ	XWC3B	External Toothed Lock, φ3 (4)
N16 Ⓢ	XUC3FT	(1)
N17 Ⓢ	XWA3B	Spring, φ3 (14)
N18 Ⓢ	XWV8	Spring, φ8 (3)
N19 Ⓢ	XWC9B	External Toothed Lock, φ9 (6)
N20 Ⓢ	XWA4BFZ	Spring, φ4 (2)
N21 Ⓢ	XWT4	Plain, φ4 (2)
N21 Ⓢ	XWG3	Plain, φ3 (5)
N22 Ⓢ	XWC4B	External Toothed Lock, φ4 (2)
NUTS		
N25 Ⓢ	XNS8	φ8 (9)
N26 Ⓢ	XNG3ES	φ3 (2)
N27 Ⓢ	XNG4ES	φ4 (2)
ACCESSORIES		
A1	SJP2237—2	Cord (1)
A2(XA)only ⚠	SJP9215	Plug Adaptor (1)
A3[other areas]	SQF11745	Instruction Book (1)
A3[XA]only	SQF11749	Instruction Book (1)
PACKING PARTS		
P1	SPP687	Polyethylene Bag (Transparent Plate) (1)
P2	SPP689	Polyethylene Bag (Transparent Plate) (1)
P3	SPH207	Sheet (1)
P4	SPS4063	Pad, AC Cord (1)
P5	SPS2955—3	Pad, Left Side (1)
P6	SPS2957—3	Pad, Right Side (1)
P7[EF]only	SPG4487	Carton Box (1)
P7[other areas]	SPG4483	Carton Box (1)

■ EXPLODED VIEWS



■ EXPLODED VIEWS



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